

# RECLAMATION

*Managing Water in the West*

Draft Environmental Assessment

## **2009 ARTICLE 5 EXCHANGES BETWEEN THE CROSS VALLEY CONTRACTORS AND OTHER WATER DISTRICTS FOR DELIVERY OF CVP WATER**

**FRESNO, TULARE, KINGS AND KERN COUNTIES**

**EA-08-99**



U.S. Department of the Interior  
Bureau of Reclamation  
Mid Pacific Region  
South Central California Area Office  
Fresno, California

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# List of Acronyms, Abbreviations and Definition of Terms

<b>AEWSD</b>	Arvin Edison Water Storage District
<b>AF</b>	Acre foot. The quantity of water required to cover one acre of land to a depth of one foot (325,872 gallons).
<b>Af/y</b>	Acre-feet per year
<b>APE</b>	Area of potential effect
<b>Aqueduct</b>	California Aqueduct
<b>Article 5</b>	An article within CVP long-term and interim contracts. Exchanges to facilitate the initial delivery of CVP supplies
<b>Article 9</b>	An article within CVP long-term and interim contracts. Transfers and exchanges
<b>Article 55</b>	An article within SWP contracts. Allows for conveyance of non-SWP Water
<b>AWTP</b>	Accelerated Water Transfer Program
<b>Banks</b>	Banks Pumping Plant
<b>BO</b>	Biological Opinion
<b>CEQA</b>	California Environmental Quality Act
<b>cfs</b>	cubic feet per second
<b>Class 1 Water</b>	Class 1 water is defined as that supply of water stored at Friant Dam which would be available for delivery from the Friant-Kern and Madera Canals as a dependable water supply during each irrigation season.
<b>Class 2 Water</b>	Class 2 water is that supply of non-storable water which becomes available in addition to the supply of Class 1 water and which because of its uncertainty as to availability and time occurrence, would not be dependable in character and would be furnished only if and when available as determined by the United States.
<b>Contract Year</b>	March 1 – February 28
<b>Corps</b>	US Army Corps of Engineers
<b>CTS</b>	California tiger salamander
<b>CV Contractors</b>	Cross Valley Contractors
<b>CVC</b>	Cross Valley Canal
<b>CVP</b>	Central Valley Project
<b>CVPIA</b>	Central Valley Project Improvement Act
<b>Delta</b>	Sacramento-San Joaquin River Delta
<b>DMC</b>	Delta Mendota Canal
<b>DWR</b>	California Department of Water Resources
<b>EA</b>	Environmental Assessment
<b>ESA</b>	Endangered Species Act
<b>Exchanger</b>	The Cross Valley CVP Contractor who is considered to be the first party in the exchange.

<b>Exchangee</b>	A water district that is considered to be the second party and receives the initial supply of water. In turn, the exchangee returns water back to the Cross Valley Contractor.
<b>FKC</b>	Friant-Kern Canal
<b>FONSI</b>	Finding of No Significant Impact
<b>ft</b>	feet
<b>FWA</b>	Friant Water Authority
<b>HVID</b>	Hills Valley Irrigation District
<b>In-Delta Supplies</b>	CVP water made available in the Delta w/o SWP commitment for conveyance
<b>Imbalanced Exchange</b>	For the purposes of this EA, imbalanced exchange arrangements would be limited to a ratio of 2:1. The 2:1 ratio is defined as during the first component of the exchange, the CV Contractor's annual allocation, not to exceed 128,300 af/y, would be delivered to exchangees. In the second component of the exchange, no less than 50% of the water that was delivered in the first component of the exchange would be delivered to the CV contractors (exchangers).
<b>IRC</b>	Interim Renewal Contract
<b>ITA</b>	Indian Trust Assets
<b>JID</b>	James Irrigation District
<b>Jones</b>	Jones Pumping Plant
<b>JPOD</b>	Joint Point of Diversion
<b>KBWA</b>	Kern Bank Water Authority
<b>KCWD</b>	Kings County Water District
<b>KDWD</b>	Kaweah Delta Water District
<b>KDWCD</b>	Kaweah Delta Water Conservation District
<b>LTRC</b>	Long-Term Renewal Contracts for CVP water
<b>MAF</b>	Million Acre Feet
<b>MS</b>	Minor Streams
<b>National Register</b>	National Register of Historic Places
<b>NEPA</b>	National Environmental Policy Act
<b>NHPA</b>	National Historic Preservation Act
<b>NMFS</b>	National Marine Fisheries Service
<b>Non-CV Contractor</b>	Potential Exchange Partners with the Cross Valley CVP Contractors
<b>Non-CVP Contractor</b>	Water purveyors that do not have long-term water service repayment contracts with Reclamation
<b>North Kern</b>	North Kern Water Storage District
<b>O&amp;M</b>	<b>operations and maintenance</b>
<b>OCAP</b>	Operations Criteria and Plan
<b>PCE</b>	Primary Constituent Element
<b>Purveyors</b>	Collective term for all water districts, irrigation districts and water agencies listed in this EA
<b>PXID</b>	Pixley Irrigation District
<b>Reclamation</b>	U.S. Bureau of Reclamation
<b>RPA</b>	Reasonable and Prudent Alternative

Service	U.S. Fish and Wildlife Service
SJV	San Joaquin Valley
<b>SOD</b>	South of Delta
<b>SWP</b>	State Water Project
<b>SWSD</b>	Semitropic Water Storage District
<b>TLBWSD</b>	Tulare Lake Basin Water Storage District
<b>water districts</b>	General term for water and irrigation districts

# Section 1 Purpose and Need for Action

## 1.1 Background

The Cross Valley (CV) contractors are seven Central Valley Project (CVP) contractors located on the eastside of the San Joaquin Valley (SJV) in Fresno, Kern, Tulare and Kings Counties. Table 1.1 identifies the CV contractors and summarizes their CVP contract supply. Figure 1-1 shows the location of the CV contractors and illustrates their juxtaposition to the Friant Division and other important features of the southern SJV including the Cross Valley Canal (CVC.)

In 1976, the CV contractors entered into water service contracts with the U.S. Bureau of Reclamation (Reclamation) for CVP water. Although the CV contractors are situated on the east side of the SJV amongst the Friant Division CVP contractors, the CV contractor's CVP water is delivered from the Sacramento and San Joaquin River Delta (Delta) by Reclamation where the State Water Project (SWP) pumps the water into the California Aqueduct (Aqueduct) for conveyance. Due to conveyance hurdles, Reclamation envisioned the CV contractors would obtain their CVP supplies via exchange.

These water districts are referred to as the CV contractors because of their use of the CVC for conveying their water supply. The CVC is a privately owned and operated canal that was constructed in the mid-1970's through a collaborative effort of several state and federal water entities. The CVC allows water to be conveyed between the Aqueduct and the Friant-Kern Canal (FKC). The FKC is owned by Reclamation, however, it is currently operated and maintained by the Friant Water Authority (FWA).

**Table 1-1 List of CV Contractors and CVP Supply**

<b>CV CONTRACTORS</b>	<b>CV CONTRACT SUPPLY (AF)</b>
<sup>1</sup> County of Fresno	3,000
<sup>2</sup> County of Tulare	5,308
Hill's Valley Irrigation District	3,346
Kern-Tulare Water District (consolidated with Rag Gulch Water District on January 1, 2009)	53,300
<sup>3</sup> Lower Tule River Irrigation District	31,102
Pixley Irrigation District	31,102
Tri-Valley Water District	1,142
<b>TOTALS</b>	<b>128,300</b>

<sup>1</sup>County of Fresno includes Fresno County Service Area #34

<sup>2</sup>County of Tulare subcontractors include Alpaugh ID, Atwell WD, Hills Valley ID, Saucelito ID<sup>3</sup>, Fransinetti Farms, Stone Corral ID<sup>3</sup>, City of Lindsay<sup>3</sup>, Strathmore Public Utility District, Styrotek, Inc., and City of Visalia

<sup>3</sup>Lower Tule River ID, Saucelito ID, Stone Corral ID and City of Lindsay receive CVP water under more than one contract, either as a Friant and/or Cross Valley Contractors.

The CVC allows for water to flow west to east by pumping or east to west by gravity. Due to this two way flow flexibility, the operations on the CVC require coordination among the users. The CVC provides flexibility in the conveyance of water supplies in the central and southern SJV. CVP or SWP water supplies originating from the Delta are the predominant supplies conveyed through the CVC although groundwater or previously banked water is also frequently conveyed in this canal.

Annual CV contractors' supply allocations are based on Reclamation's South of the Delta (SOD) allocations, which are a percentage of the contract total (Table 1.1.) Allocations are based on available water supplies, meeting Delta water quality, environmental and flow requirements and pumping capacity as well as other hydrologic and operational factors. Additionally, as the Department of Water Resources (DWR) pumps the CV contractor's Delta supplies after all the other needs of the SWP have been met, there have been additional reductions in the CV contractor's water supplies due to pumping limitations.



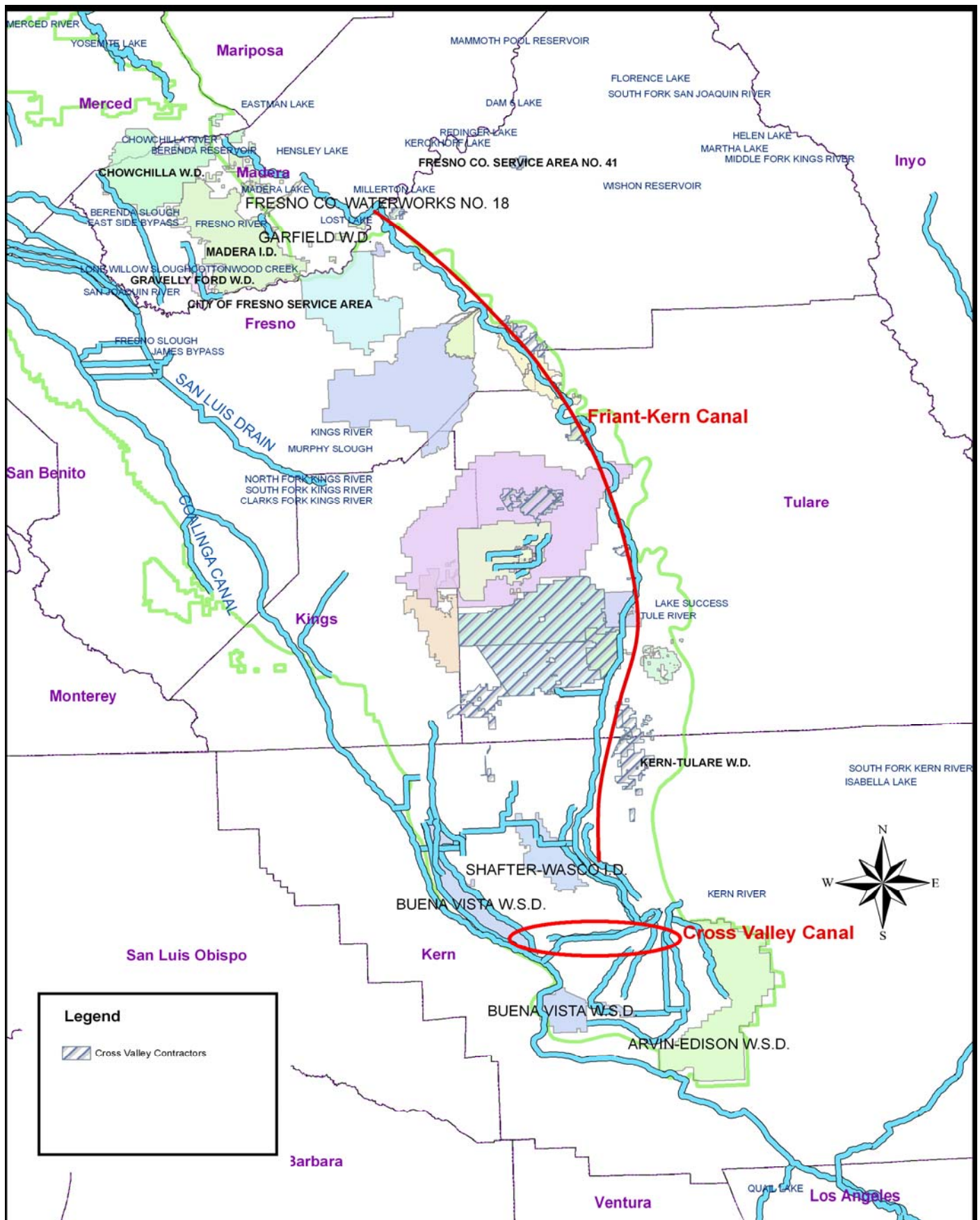


Figure 1-1 Cross Valley Contractors

Typically, CVP Delta supplies are made available, by Reclamation, in Clifton Court Forebay when requested by the CV contractors (see Figure 1-2). DWR pumps the water at the Banks Pumping Plant and conveys this water in the Aqueduct to the CVC. The CV Contractors must find a way to get their supplies from the CVC into their districts on the east side of the SJV. Therefore, the mechanism for exchange arrangements is set forth in Article 5 of the water service contract. This article in part states that “...the parties acknowledge that Project Water furnished to the Contractor...shall be delivered to the Contractor by direct delivery via the CVC and/or by exchange arrangements involving Arvin Edison Water Storage District (AEWSD) or others. The parties further acknowledge that such arrangements are not transfers subject to Section 3405(a) of the CVPIA.” (Project water as used above is defined as water that is developed, diverted, stored, or delivered by the Secretary in accordance with the statutes authorizing the CVP and in accordance with all terms and conditions of water rights acquired pursuant to California law.)

Although the CV contractor’s Delta supplies are made available by Reclamation, DWR has a hierarchy for meeting the SWP water supplies and the CVP water supplies are subordinate to SWP uses. Depending on the SWP pumping capacity needs, DWR typically does not have an opportunity to pump the full annual allocation of water supplies to the CV contractors on a demand pattern. When DWR has an opportunity to pump CVP water it may be a large volume in a short amount of time. The CV contractors typically cannot take direct delivery of the entire amount and it may occur at a time that is outside of the growing season and not immediately needed.

Originally the CV contractor’s CVP water was delivered through the CVC for exchange with AEWSD. Due to changing conditions AEWSD has not continued to have exchange relationships with all of the CV contractors. In past interim contracts, Reclamation allowed for exchange arrangements to be pursued with others as well as with AEWSD. AEWSD obtained CV contractor Delta supplies and used it to meet their in-district water supply demands. In exchange, AEWSD’s Friant CVP water supply was diverted by the CV contractors in the FKC and used to meet their in-district water supply needs. In recent years, other exchanges between CV contractors and CVP contractors or other water entities have undergone environmental reviews and short-term approvals. It is anticipated these other exchanges will occur over the term of the CV contractor’s future water service contracts.

Only Kern-Tulare Water District (recently consolidated with Rag Gulch Water District) has direct access from the CVC via privately owned siphons which transport the water from the CVC to the FKC; however, the existing facilities provide a limited amount of water (up to 100 cubic feet per second (cfs)) directly. The other CV contractors rely upon exchange agreements with other water entities, such as AEWSD, to receive their supply. For example, Fresno County, Pixley Irrigation District and Lower Tule River Irrigation District do not have exchange agreements with AEWSD. Recently, these three districts have transferred their water and used the money to purchase local supplies.

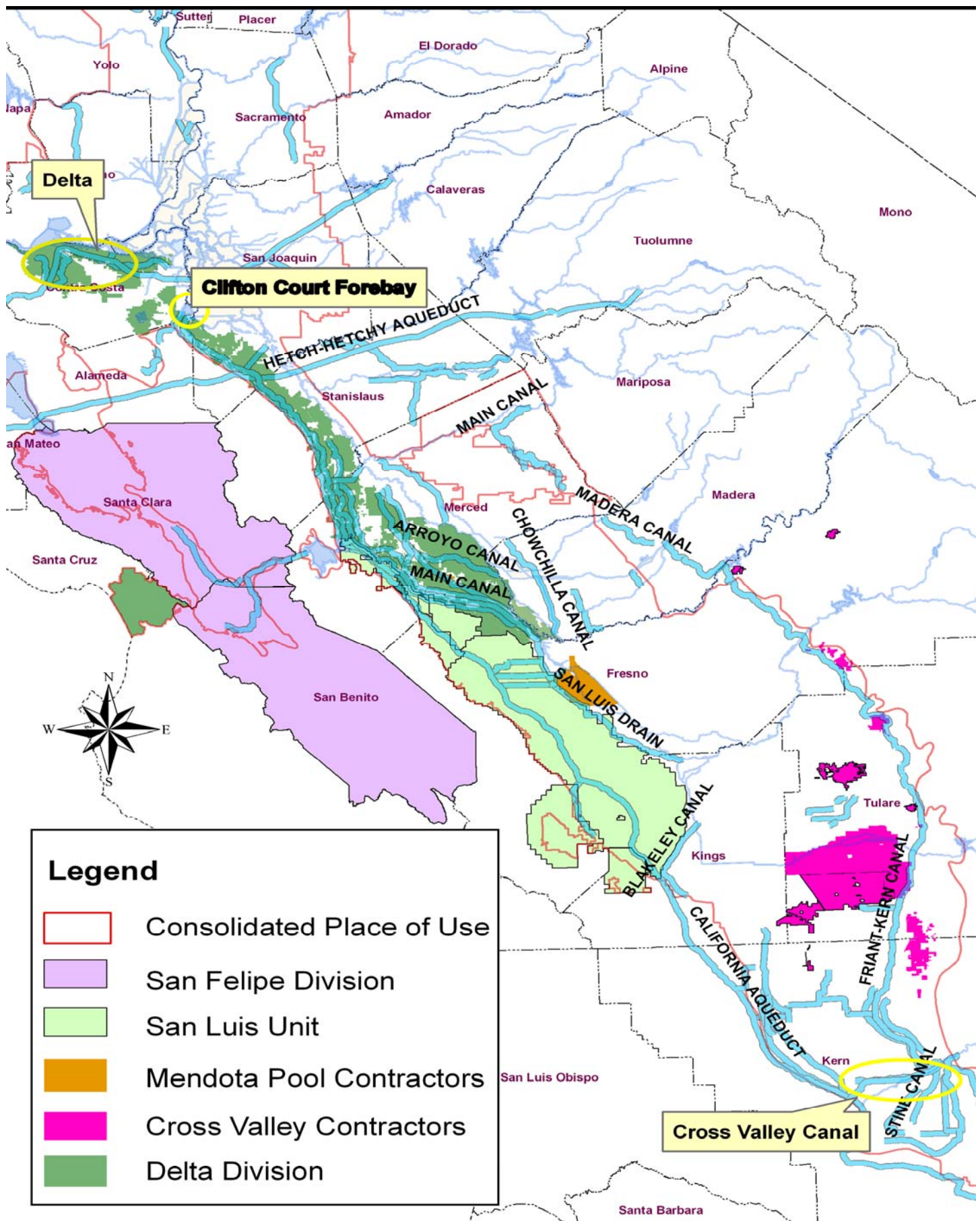


Figure 1-2 **San Joaquin Valley Conveyance Systems**



## **1.2 Purpose and Need**

The CV contractors need a mechanism to take delivery of up to 128,300 acre-feet (AF) of their contractual Delta CVP water supply. The CV contractors cannot take direct delivery of their water supply and need to enter into exchanges to allow them to take delivery of their CVP water. The purpose of the action is to provide delivery of CV contractors' contractual CVP water supply on a demand schedule where the CV contractors' have the ability to take delivery of their water supplies in large quantities in short periods of time.

## **1.3 Scope**

This Environmental Assessment (EA) is a site specific analysis of the Article 5(a) exchange arrangements for delivery of CVP Delta water supplies to be exchanged with Friant CVP contractors, and other non-CVP water entities for CVP and other sources of water. The other sources of water include rivers, streams, creeks, groundwater and SWP water.

This EA analyzes the 2009 contract year which runs from March 1, 2009 through February 28, 2010. This EA will cover the broadest flexibility for exchange arrangements known at this time. Proposed exchange arrangements not covered in this National Environmental Policy Act (NEPA) and Endangered Species Act (ESA) review process would require separate and/or tiered environmental review to cover the site specific proposal and analysis of environmental impacts to the human environment.

Due to varying hydrological conditions and other circumstances imbalanced exchanges could occur. For the purposes of this EA, imbalanced exchange arrangements would be limited to a ratio of 2:1. Proposed exchange arrangements exceeding this amount are not within the scope of this analysis. Subsequent environmental reviews would be required. Appendix B contains four scenarios whereby these imbalanced exchanges could occur. In addition, Appendix B describes three examples of how the different sources of water are exchanged in existing facilities.

All lands affected by the proposed action are located within Fresno, Tulare, Kings and Kern Counties.

## **1.4 Related Actions**

### **Programmatic Environmental Impact Statement for the Central Valley Project Improvement Act.**

Reclamation completed the Final Programmatic Environmental Impact Statement for the Central Valley Project Improvement Act (CVPIA) in October 1999 that analyzed alternatives and implementation of the CVPIA. The Record of Decision was signed in January 9, 2001. The Final Programmatic Environmental Impact Statement and Record of Decision for the CVPIA are incorporated by reference.

### **Programmatic Biological Opinion on Implementation of the CVPIA and Continued Operation and Maintenance of the CVP**

The U.S. Fish and Wildlife Service (Service) issued the Programmatic Biological Opinion on Implementation of the CVPIA and Continued Operation and Maintenance of the CVP (CVPIA PBO) (File Number 1-1-01-I-0311) in November 2000.

Reclamation's program to implement the CVPIA included the renewal of all existing CVP contracts as a core program (CVPIA PBO, page 2-29 to 2-36). The CVPIA Project Description listed nine significant areas of commitment that provided the basis of the PBO no jeopardy finding (page 2-50 to 2-71). These nine areas of commitment are listed below:

1. Commitments Associated with Implementation of the CVPIA.
  - Anadromous Fisheries Restoration Activities (§3406(b)(1)).
  - Habitat Restoration Program (§3406(b)(1) other).
2. Commitments Associated with Long term Renewal of CVP Water Contracts.
3. Commitments for Activities Associated with CVP Water and/or Facilities.
4. Commitments Associated with CVP Conveyance and Storage.
5. Commitments Associated with Operations and Management Planning.
6. Commitments Associated with Conservation Programs.
  - Wildlife Habitat Augmentation Program (Wetland Development Program).
  - CVP Conservation Program.
  - Comprehensive Mapping Program.
7. Commitments Associated with Drainage.
8. Commitments Associated with General Consultation Process.
9. Commitments and Strategy to Ensure Compliance with the Endangered Species Act.

November 2000

Pages 2-69 and 2-70, section VI. I. 7 and 8 state:

“7. CVP or CVPIA actions or parts of actions, which may affect listed species or for which there is not enough information available to estimate take or make a not likely to adversely affect determination, will receive future tiered analysis and consultation. Reclamation or the Service will provide to the Service’s SFWO Endangered Species Division, dependent on lead agency status, clear descriptions of proposed CVP or CVPIA actions, specific areas that may be affected directly or indirectly by these actions, the manner in which the actions may affect any listed species or designated critical habitat, and other relevant reports and information. Reclamation and the Service will also identify any and all interrelated and interdependent actions and measures related to the proposed CVP or CVPIA action. In those situations where the lead agency, or the Service’s SFWO Endangered Species Division, determines that an action may affect listed species or may adversely modify designated critical habitat, Reclamation and/or the Service will initiate informal or formal consultation as appropriate.

8, Reclamation and the Service will work together to develop means to more effectively facilitate ESA compliance through the coordination of activities and commitments discussed in this Project Description. This coordination will include establishment of a process within three months of this

biological opinion that will provide necessary information to the Service's SFWO Endangered Species Division in situations where a determination of no effect has been made, sufficiently in advance, to enable the Service's review."

### **Biological Opinions for the Continued Long-term Operation of the Central Valley Project (CVP) and State Water Project (SWP)**

On July 30, 2004, the Service issued Biological Opinion (BO) 1-1-04-F-0140, which addressed the effects of operating the CVP/SWP and delivering CVP water for renewing water contracts and other actions on the threatened delta smelt. On February 16, 2005, the Service issued BO 1-1-05-F-0055 in response to Reclamation's November 3, 2004, request for reinitiation of formal consultation on the then existing OCAP to address potential critical habitat issues and effects of the CVP/SWP operations on delta smelt.

The Department of the Interior was sued on this BO. Reclamation reinitiated consultation and the BO was found legally insufficient by Judge Wanger of the United States District Court for the Eastern District of California (Court). Judge Wanger ordered that a new BO be developed by September 15, 2008. Subsequently, an extension was requested and granted, and a new BO was issued on December 15, 2008. The Service concluded that the coordinated operations of the CVP and SWP, as proposed, were likely to jeopardize the continued existence of the delta smelt, and were likely to adversely modify the delta smelt's critical habitat. The Service developed a reasonable and prudent alternative (RPA) that the Service believes will avoid jeopardy and adverse modification. On December 15, 2008, Reclamation issued a memo to the Service provisionally accepting the RPA. Reclamation found that two of the components of the RPA require further review and refinement to determine whether their implementation is reasonable and prudent. If Reclamation, in coordination with DWR, finds that these two components are not reasonable and prudent, Reclamation will reinitiate consultation. In the meantime, Reclamation committed to immediately implement the RPA by modifying operations as required to comply with the RPA.

The National Marine Fisheries Service (NMFS) issued a non-jeopardy BO with regard to impacts of the proposed revised operations for the then existing OCAP, dated October 22, 2004 (151422SWR04SA9116: BFO). On April 16, 2008, Judge Wanger issued a Memorandum Decision and Order on the Cross-Motions for Summary Judgment filed in *PCFFA et al. v. Gutierrez et al.*, 1:06-cv-245-OWW-GSA (E.D. Cal. 2008). The Court found that the BO issued by NMFS in 2004 was legally insufficient. Judge Wanger remanded the BO without vacatur and order a new BO be developed by March 2, 2009.

On April 26 and May 19, 2006, Reclamation requested reinitiation of consultation operation of the CVP/SWP based on new listings and designated critical habitats. On October 1, 2008, NMFS received Reclamation's final biological assessment.

NMFS issued a draft BO on December 11, 2008 (2006/07858). NMFS concluded that the coordinated operations of the CVP and SWP are likely to jeopardize the continued existence of the Sacramento River

winter-run Chinook salmon, the Central Valley spring-run Chinook salmon, the Central Valley steelhead, and the Southern Distinct Population Segment of North American green sturgeon. NFMS found that the proposed action is also likely to destroy or adversely modify the designated critical habitats of Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, and Central Valley steelhead, and is likely to destroy or adversely modify the proposed critical habitat of Southern DPS of North American green sturgeon. The draft opinion concludes that the proposed action is not likely to jeopardize the continued existence of Central California Coast steelhead. NMFS is also considering the effects of the long-term CVP/SWP operations on Southern Resident killer whales (Southern Residents) as it relates to their Chinook salmon prey. An extension has been requested on the March 2, 2009 deadline for the issuance of a final BO. That final BO, when issued, will supersede the October 22, 2004 BO. As the October 22, 2004 BO was remanded without vacatur, it remains in place at this time and Reclamation is continuing to comply with the terms of that BO as ordered by the Court.

### **Cross Valley Canal Unit Long Term Contract Renewal Final EA**

A Finding of No Significant Impact (FONSI) and final EA, Cross Valley Unit Long Term Contract Renewal, dated January 19, 2001 (CV EA) was prepared by Reclamation to analyze the impacts associated with the renewal of a long-term (25 years) water service contract with the CV contractors. This CV EA is hereby incorporated by reference into this EA.

### **Friant Division Long Term Contract Renewal Final EA**

A final EA, Friant Division Long Term Contract Renewal, dated January 19, 2001, (Friant EA) was prepared by Reclamation to analyze the impacts associated with the renewal of a long-term (25 years) water service contract with the Friant Division. This Friant EA is hereby incorporated by reference into this EA.

### **Biological Opinion on U.S. Bureau of Reclamation Long Term Contract Renewal of Friant Division and Cross Valley Unit Contractors.**

The Friant Division requested a formal consultation with the Service pursuant to section 7 of the ESA, as amended, as part of renewal of 28 long-term water service contracts. Reclamation committed to initiating consultation on other aspects of the CVP so that interrelated and interdependent impacts and cumulative impacts on species outside the SJV could be fully addressed. With that in mind, the Service issued its BO on October 15, 1991 and Amendment of the BO on May 14, 1992. In their BO, the Service stated that renewal of the 28 long-term contracts would not likely jeopardize the continued existence of 15 threatened and endangered species found within the Friant Division service area, provided Reclamation implement short and long-term endangered species conservation programs to mitigate the adverse impacts of continued CVP water delivery to the Friant Division. This program also committed the Service to participate by providing technical assistance and developing revised recovery plans for the SJV species needed for the timely resolution of listed species concerns. With contract renewal, the Friant Division Project will continue to fulfill CVP purposes, while avoiding adverse impact to threatened and endangered species.

The BO, *U.S. Bureau of Reclamation Long Term Contract Renewal of Friant Division and Cross Valley Unit Contractors*, January 19, 2001, File Number 1-1-01-F-0027 ( LTCR Opinion) was prepared by the FWS to address the proposed renewal by Reclamation of water service contract with the Friant Division and CV Units of the CVP in accordance with Section 7 of the ESA. The FWS concluded that the renewal for 25 years of the CVP water service contract is not likely to jeopardize 34 listed species. However, transfers and or exchanges involving Friant Division or CV Contractors were not addressed by the BO. The LTCR Opinion did not address some of the species and critical habitats covered in this EA, because their listings/designations occurred after the LTCR Opinion was issued. These species and critical habitats are: the vernal pool fairy shrimp, the vernal pool tadpole shrimp, all critical habitats for vernal pool species, and critical habitat for the California tiger salamander.

### **Biological Opinion on the Operations and Maintenance Program on Bureau of Reclamation Lands within the South-Central California Area Office**

The Service issued this opinion (1-1-04-F-0368), dated February 17, 2005, for routine operations and maintenance (O&M) activities on SCCAO lands in San Joaquin, Stanislaus, Merced, Madera, Fresno, Santa Clara, San Benito and Contra Costa Counties. The opinion addressed effects on the California tiger salamander, vernal pool fairy shrimp, valley elderberry longhorn beetle, blunt-nosed leopard lizard, vernal pool tadpole shrimp, San Joaquin woolly-threads, California red-legged frog, giant garter snake, San Joaquin kit fox, and proposed critical habitat for California tiger salamander, and California red-legged frog. The Service concurred that the Proposed Action was not likely to adversely affect the Conservancy fairy shrimp, longhorn fairy shrimp, succulent owl's-clover and its critical habitat, Hoover's spurge and its critical habitat, the giant kangaroo rat, California condor, bald eagle, delta smelt, San Joaquin adobe sunburst, California clapper rail, salt marsh harvest mouse, Greene's tuctoria and its critical habitat, SJV Orcutt grass and its critical habitat and critical habitat for the vernal pool fairy shrimp and vernal pool tadpole shrimp.

### **Accelerated Water Transfer Program (AWTP)**

A Finding of No Significant Impact (FONSI) and final EA for the AWTP of the Friant Division Contractors, dated February 28, 2005, were completed. The EA was prepared to analyze the impacts of temporary transfers and exchanges of up to 150,000 AF/y of CVP water between CVP contractors within the Friant Division. The actions analyzed included the typical transfers and exchanges for agriculture water that were for short-term (less than a one year time period), local, and between Friant contractors. The AWTP EA is hereby incorporated by reference. This EA was subsequently supplemented to allow for transfers under the AWTP of up to 255,000 AF/y. The supplemental EA is also incorporated by reference.

### **Supplemental EA for the Long Term Contract Renewal for the Cross Valley Contractors.**

Reclamation has determined new information has become available since the signing of the 2001 EA and FONSI for the Long-Term Contract Renewal for the CV contractors. Once the Endangered Species Act compliance is complete on the continued long-term operation of the CVP and SWP, Reclamation will update the existing environmental documents in anticipation of renewing Cross Valley contractor's interim contracts.



### **EA for the Exchange of Cross Valley Central Valley Project Water between Lower Tule River Irrigation District and Tulare Lake Basin Water Storage District.**

A FONSI and final EA, *Exchange of Cross Valley Central Valley Project Water between Lower Tule River Irrigation District and Tulare Lake Basin Water Storage District*, dated March 2004 was prepared analyzing the exchange of up to 15,000 AF/y of CVP and Tule River water. This EA for the exchange is hereby incorporated by reference.

### **EA for the Annual Exchanges of 20,000 AF of Water between Fresno Irrigation District, Kern Tulare Water District and Tulare Lake Basin Water Storage District.**

A FONSI and final EA, *Ten Year EA for the Annual Exchange of 20,000 AF of Water Between Fresno Irrigation District, Kern Tulare Water District and Tulare Lake Basin Water Storage District*, dated November 2003 were prepared analyzing the impacts over a 10-year period for annual approvals of exchanges of CVP, Kern River, and Kings River water. This 10-year EA for annual exchanges for up to 20,000 AF of water is hereby incorporated by reference.

### **EA for the One-Time Exchange between Kern-Tulare and Rag Gulch Water Districts to Kern County Water Agency**

A FONSI and final EA, *Approval for One-Time Exchange and or Transfer from Kern-Tulare and Rag Gulch Water District to Kern County Water Agency*, dated July 2004 were completed. This EA analyzed the one time exchange of CVP and SWP water and is hereby incorporated by reference.

### **EA for the Interim Renewal of Cross Valley Contracts**

A FONSI and final EA, *Environmental Assessment for the 2008 Renewal of Interim Water Service Contracts through February 28, 2010* were completed in February 2008. This EA evaluated the execution of up to 15 interim renewal water service contracts (IRC) between Reclamation and the CVP contractors including the CV contractors. The existing CV IRC expired on February 29, 2008. The CV contractors were in their eleventh IRC and the proposed renewal was the twelfth. The EA evaluated the continuation of the existing IRCs, with only minor, administrative changes to the contract provisions to update the previous IRCs for the new contract period. These IRCs expire February 28, 2010.

## **1.5 Potential Issues**

Resource issues evaluated in detail in this EA focus on the following:

- Water Resources
- Land Use Resources
- Biological Resources
- Cultural and Historical Resources
- Socioeconomic Resources
- Indian Trust Resources
- Environmental Justice

The following resources issues were eliminated from further consideration because the Proposed Action would not result in impacts to the resources:

- Recreational Resources

- Air Quality
- Geology and Soils
- Visual Resources

## **Section 2 Alternatives Including Proposed Action**

### **2.1 No Action**

Under the No Action Alternative, exchanges between AEWS and the CV contractors to allow delivery of the CV contractors' contract supplies would continue as in the past. Some of the CV contractors who do not have an exchange agreement with AEWS would have to transfer their water as in the past or develop new exchange arrangements that would be analyzed on a case by case basis. The new exchange arrangements are speculative and an amount of water may not be delivered to the CV contractors under the No Action Alternative.

### **2.2 Proposed Action**

Reclamation would approve CV contractors' exchange arrangements as individually proposed with exchangees in addition to AEWS in the 2009 contract year for up to the full CV contractors' CVP contract supply of 128,300 AF/y. Potential exchangees are identified in Tables 3.1 thru 3.8 in Section 3 of this EA. Under the Proposed Action these imbalanced exchanges would be limited to a 2:1 ratio.

A 2:1 exchange occurs when the first component of the exchange, the CV contractor's annual allocation, not to exceed 128,300 AF/y, would be delivered to a participating entity (exchangee). As the second component of the exchange, no less than 50 percent of the water that was delivered in the first component of the exchange to the exchangee would be delivered to the CV contractors (exchangers).

CVP water may be moved under Article 55 of a SWP contract as one component of the exchange. Article 55 of the SWP contracts allows for the SWP contractor to wheel non-SWP water in their increment of capacity in the Aqueduct. Under this scenario, a SWP contractor would request DWR to convey a CV contractor's CVP water, if capacity exists, in the Aqueduct. This option results in elevating the CV contractor's priority for DWR to convey the water.

Each proposed exchange arrangement would be submitted to Reclamation for review and determination that the action is consistent with the criteria described within this NEPA analysis, in addition to all applicable Federal, State, local laws, permits and regulations. Exchangees would be precluded from applying exchanged CV contractors' supplies to native lands. Lands that have been fallowed and untilled for three or more years would undergo biological surveys and environmental review under NEPA and ESA prior to approval. CVP water is tracked from its origin to its final disposition (end use) and does not lose its federal characteristics under the

California water rights permits. Water supplies would be used in compliance with the applicable water rights permits and conform to the applicable purpose and place of use of the associated water rights permit.

The following commitments are part of the Proposed Action:

- The exchanged water may be applied only to lands located within the appropriate Place of Use boundaries,
- The water may be used for either Agricultural or M&I purposes,
- No native or untilled land (fallow for three years or more) may be cultivated with this water,
- No new construction or modification of existing facilities is to occur in order to complete the Proposed Action,
- No change in the point of diversion or Places of Use without prior approvals from the State Water Resources Control Board and Reclamation or DWR as applicable,
- No unmitigable impact can be caused to a third party,
- Exchanges must not alter the quality of water, or the hydrological regime of natural waterways or natural watercourses such as rivers, streams, creeks, lakes, ponds, pools, or wetlands, etc., in a way that may have a detrimental effect on fish or wildlife or their habitats,
- All exchanges must comply with all applicable federal, state and local laws, regulations, permits and policies.
- Reclamation will review each exchange proposal for compliance with the above conditions prior to approval and execution of the action.

## **2.3 Past, Present and Reasonably Foreseeable Future Actions not Part of the Proposed Action but Related to Cumulative Effects**

### **Kern Tulare Water District Groundwater Banking Project in Rosedale-Rio Bravo Water Storage District.**

Reclamation has completed the EA and FONSI. (EA-05-112) analyzing Kern Tulare Water District's banking of surplus water. This groundwater banking project could be used to bank the Article 5 exchange water. However, the groundwater banking project would be implemented with or without the proposed Article 5 exchanges.

## **Kern Tulare Water District Groundwater Banking Project with North Kern Water Storage District.**

Reclamation has completed the EA and FONSI (EA-05-10 signed 2/25/05). Kern Tulare Water District would bank surplus water, when available. This groundwater banking project could be used to bank the Article 5 exchange water. However, the groundwater banking project would be implemented with or without the proposed Article 5 exchanges.

## **Cross Valley Expansion Project and Intertie with Friant-Kern Canal**

The CVC Expansion Project has undergone environmental review under California Environmental Quality Act (CEQA) and NEPA. This project expands the capacity of the CVC and includes construction to increase the capacity and turnouts to deliver water to groundwater banking facilities and across the CVC. It also involved the interconnection of the CVC with the FKC allowing water to flow in both directions.

## **Cross Valley Intertie with Friant-Kern Canal**

Reclamation has completed the EA and FONSI on this project. Reclamation's action was to issue a permit to the FWA allowing the construction of an interconnection (or Intertie) between the FKC and the CVC at their closest point. The connection will allow conveyance flexibility and therefore flexibility of use for surface water in the SJV by connecting the existing FKC to a pump station and junction box taking water from the afterbay of CVC Pumping Plant #6. Roughly 880 feet (ft) of eight ft diameter underground pipeline will be installed parallel to the AEWS Intake Canal to provide up to 500 cfs of flow between the FKC and the CVC, in either direction. Reclamation determined that the Proposed Action would not affect federally listed or proposed species or designated or proposed critical habitat. A preconstruction survey and standard avoidance measures for the San Joaquin kit fox were required.

## **Kern-Tulare and Rag Gulch Water Districts Consolidation**

Prior to January 1, 2009, Kern Tulare and Rag Gulch Water Districts shared a common general manager, distribution facilities and staff, but the two districts were governed by two separate Boards of Directors. In addition, all costs of operations, accounting of assets, delivery of water, and record keeping were unnecessarily done separately prompting Kern Tulare and Rag Gulch Water Districts to petition the Local Area Formation Commission of Kern County to consolidate the two districts. In recognition of the districts' request to consolidate, Reclamation approved a contract assignment assigning Rag Gulch's contract to Kern Tulare and recognizing water supplies and service areas under one contract. This contract assignment was effective January 1, 2009 and will be reflected in this EA with the reduction of CV contractors which in previous years were eight and now, in light of the contract assignment, number seven.

## Section 3 Affected Environment & Environmental Consequences

The context for this EA is the valley floor of the SJV within Fresno, Tulare, Kings and Kern Counties. Water districts within these counties are characterized as either CVP contractors including the CV contractors, or other water districts (non-CVP contractors) who would participate as exchangees. This section identifies the affected environment, conditions that currently exist, and the areas of concern that may be affected by the Proposed Action.

### 3.1 Water Resources

#### 3.1.1 Affected Environment

##### *Cross Valley Contractors*

CV contractors are CVP contractors that are geographically located within the Friant Division. A complete narrative description of these contractors is found in Appendix C of this EA. In summary there are seven CV contractors with a total CVP supply of 128,300 AF. One of the CV contractors has 10 subcontractors which are identified in Table 3.1 and in Appendix C. The County of Tulare is in the process of assigning a portion of the contract to each of these subcontractors. This assignment process is expected to be complete before March 1, 2010. This would change the number of CV contractors to 17.

Water deliveries to the CV contractors are made available, by Reclamation, in the Delta and are diverted through the Harvey O. Banks Pumping Plant of the SWP. This CVP water is subordinate in priorities for pumping by DWR.

In 1975, the CVC was completed bringing water from the Aqueduct near Taft, California, through a series of six pump lifts to the east side of the SJV near the city of Bakersfield. Delta CV contractors CVP water supply was designed to be delivered to AEWSO in exchange for a portion of their Friant Division CVP water supply available through Millerton Lake.

Recently, Fresno County, Pixley Irrigation District and Lower Tule River Irrigation District have discontinued the exchange with AEWSO and have transferred their CVP Delta water to other CVP water districts and purchased local supplies. Fresno County is negotiating with AEWSO to continue the exchanges.

Typically, these exchanges result in imbalanced exchanges. Imbalanced exchanges occur due to the following:

- Differences in hydrological conditions
- Losses due to evaporation and/or seepage

- Differences in the value of the water
- Timing

CV contractors have a limited capability to receive Delta water directly from the CVC.

Due to the above, exchanges between the CV contractors and other water districts may include compensatory arrangements for water imbalances due to the hydrological conditions, the time of year the water is delivered, and value of such water. These exchange arrangements under Article 5(a) are not water transfers subject to Section 3405(a) of the CVPIA. (The specific Article 5 language is found in Appendix A.)

**Table 3-1 CV Contractors**

<b>CVC CONTRACTORS</b>	<b>CVP CONTRACT SUPPLY (AF)</b>	<b>OTHER SURFACE SUPPLY</b>	<b>Ground- water Safe Yield</b>	<b>Groundwater Recharge</b>
County of Fresno County of Fresno Fresno County Service Area 34 (Brighten Crest)	<b><u>3,000 Total</u></b> 1608 M&I 1,392 M&I	Unknown	*	Yes
County of Tulare Alpaugh ID Atwell Island WD Hills Valley Irrigation District Saucelito ID Stone Corral ID City of Lindsay Fransinetto Farms Strathmore Public Utility District Styrotek, Inc. City of Visalia	<b><u>5,308 Total</u></b> 100 Ag 50 Ag 2,913 Ag 100 Ag 950 Ag 50 M&I 400 Ag 400 M&I 45 M&I 300 M&I	Groundwater	*	Yes
Hill's Valley Irrigation District	3,346 Ag	Unknown	*	Yes
Kern-Tulare Water District	53,300 Ag	23,000 AF/y Kern River exchanged with ID 4 for SWP water	*	Not within service boundary
Lower Tule River Irrigation District	31,102 Ag	70,000 Tule River 61,200 FKC 238,000 FKC	*	Yes
Pixley Irrigation District	31,102 Ag	Groundwater Deer Creek	*	Deer Creek
Tri-Valley Water District	1,142 Ag	Limited Groundwater	*	No
<b>TOTALS</b>	128,300 Ag	-	-	-

\*The safe groundwater yield is difficult to quantify. However, the safe yield of groundwater is generally considered to be 1 AF of water for every 1 acre of land.

### ***Friant CVP Contractors***

Friant CVP contractors are located on the eastern side of the SJV (See Figure 1-1). CVP water for these contractors comes from Millerton Lake via the FKC or the Madera Canal. CVP water is released from Millerton Lake into the 152 mile long FKC flowing south and the 36-mile long Madera Canal flowing north. Water conveyed to these contractors is categorized as Friant Class 1 or Class 2 water depending on its reliability and allocation circumstances.



A complete narrative description of the Friant CVP contractors that are potential exchangees is found in Appendix D in of this EA. In summary, there are 27 Friant CVP contractors. However, only 20 have been identified as potential exchangees for the purposes of this EA. Table 3.2 depicts the CVP and non-CVP supplies for the Friant Division. Reclamation does not have approval authority for transfers or exchanges involving non-CVP water only.

**Table 3-2** Potential Exchanges from the Friant Division CVP Contractors

<b>FRIANT CVP CONTRACTORS</b>	<b>Class 1 AF/y</b>	<b>Class 2 AF/y</b>	<b>Other Surface Supply</b>	<b>Groundwater Safe Yield</b>	<b>Groundwater Recharge</b>
Arvin-Edison Water Storage District	40,000	311,675	Kern River	89,900	Yes
Delano-Earlimart Irrigation District	108,800	574,500	0	*	White River channel
Exeter Irrigation District	11,500	19,000	0	*	Yokohl Creek
Fresno Irrigation District	0	75,000	Kings River 800,000	*	Yes
Garfield Water District	3,500	0	0	*	Unknown
Ivanhoe Irrigation District	7,700	7,900	Wutchumna Water Company Stock 3,950 ST Johns River Cotton Creek	*	ST Johns River and Cotton Creek
Lewis Creek Water District	1,450	0	0	*	Unknown
Lindmore Irrigation District	33,000	22,000	0	21,000	Yes
Lindsay-Strathmore Irrigation District	27,500	0	Wutchmna Water Company Stock 5-45,000	18,000	Unknown
Lower Tule River Irrigation District	61,200	238,000	Tule River 70,000 31,102 CV	*	Unknown
Orange Cove Irrigation District	39,200	0	0	28,000	Only a small amount in certain areas
Porterville Irrigation District	16,000	30,000	Tule River 12,900 Average, Porter Slough	0	No
Saucelito Irrigation District	21,200	32,800	0	*	Deer Creek only when CVP water is diverted from FKC
Shafter-Wasco Irrigation District	50,000	39,600	0	*	0
Southern San Joaquin Municipal Utility District	97,000	50,000	0	0	Poso Creek and other foothill runoff

<b>FRIANT CVP CONTRACTORS</b>	<b>Class 1 AF/y</b>	<b>Class 2 AF/y</b>	<b>Other Surface Supply</b>	<b>Groundwater Safe Yield</b>	<b>Groundwater Recharge</b>
					creeks
Stone Corral Irrigation District	10,000	0	950 via exchanges with other CVP Contractors	*	Unknown
Tea Pot Dome Water District	7,500	0	0	0	0
Terra Bella Irrigation District	29,000	0	0	0	Deer Creek
Tulare Irrigation District	30,000	141,000	0	0	0

\*The safe groundwater yield is difficult to quantify. However, the safe yield of groundwater is generally considered to be 1 AF of water for every 1 acre of land.

### ***Others***

Below is a list of non-CVP potential exchangees:

Buena Vista Water Storage District	Kings County Water District
Cawelo Water District	Kings River Conservation District
Consolidated Irrigation District	Lakeside Irrigation District
Corcoran Irrigation District	Liberty Water District
Deer Creek & Tule River Authority	North Kern Water Storage District
Kaweah Delta Water Conservation District	Kern Water Bank Authority
Kern County Water Agency	Semitropic Water Storage District
Kern Delta Water District	
Rosedale-Rio Bravo Water Storage District	
Tulare Lake Basin Water Storage District	

Some of these districts have sub-entities which may include CVP and/or SWP contractors. A complete narrative description of CVP contractors and non-CVP contractors that are potential exchangees is found in Appendix E of this EA and Tables 3.3 to 3.8.

In some cases, the diversions of non-CVP water from rivers, creeks and ditches, is based on the total runoff in any given hydrological season. The districts receive a percentage of the runoff and no specific limit exists to the total annual supply. The total amount of non-CVP water is difficult to quantify. Therefore, average water supplies are depicted.

**Table 3-3** Deer Creek & Tule River Authority

<b>DEER CREEK &amp; TULE RIVER AUTHORITY</b>	<b>Friant</b>	<b>CV</b>	<b>Other Surface Supply</b>	<b>Groundwater Safe Yield</b>	<b>Groundwater Recharge</b>
Lower Tule River Irrigation District	61,200 Class 1 238,000 Class 2	31,102	Tule River 70,000	*	Unknown
Pixley Irrigation District		31,102	Deer Creek	*	Via Deer Creek
Porterville Irrigation District	16,000 Class 1 30,000 Class 2	0	Tule River 12,900 Average, Porter Slough	0	Yes
Saucelito Irrigation District	21,200 Class 1 32,800 Class 2	100 CVC Supply	3,200	*	Deer Creek only when CVP water is diverted from FKC
Stone Corral Irrigation District	10,000 Class 1	0	950 AF/y via exchanges with other CVP Contractors	3,200	Unknown
Terra Bella Irrigation District	29,000 Class 1	0	0	0	Deer Creek

\*The safe groundwater yield is difficult to quantify. However, the safe yield of groundwater is generally considered to be 1 AF of water for every 1 acre of land.

**Table 3-4** Kaweah Delta Water Conservation District

<b>Kaweah Delta Water Conservation District</b>	<b>Friant</b>	<b>CV</b>	<b>Other Surface Supply</b>	<b>Groundwater Safe Yield</b>	<b>Groundwater Recharge</b>
Lakeside Irrigation Water District	0	0	Kaweah River Cottonwood Creek, Cross Creek, and Kings River	*	Y Cross Creek, Recharge basins
County of Tulare	0	5,308	Kings, Kaweah, Tule Rivers	*	Unknown
Corcoran Irrigation District	0	0	AF/y Kings River	*	Y
Kings County Water District	0	0	Kings and Kaweah Rivers	*	Y

<b>Kaweah Delta Water Conservation District</b>	<b>Friant</b>	<b>CV</b>	<b>Other Surface Supply</b>	<b>Groundwater Safe Yield</b>	<b>Groundwater Recharge</b>
Tulare Irrigation District	30,000 Class 1 141,000 Class 2	0	Kaweah River	10% of natural and artificial recharge	Y

\*The safe groundwater yield is difficult to quantify. However, the safe yield of groundwater is generally considered to be 1 AF of water for every 1 acre of land.

**Table 3-5 Kern County Water Agency**

<b>Kern County Water Agency</b>	<b>CVP<sup>2</sup></b>	<b>Other Surface Supply</b>	<b>Ground-water Safe Yield</b>	<b>Ground-water Recharge</b>
Belridge Water Storage District <sup>1</sup>	N	SWP	n/a	None
Berrenda Mesa Water District <sup>1</sup>	N	SWP	n/a	None
Buena Vista Water Storage District	Y	SWP Kern River	0.3 ac/ft	Yes
Cawelo Water District	Y	45,000 AF/y SWP Wet years only Poso Creek 27,000 Kern River Reclaimed oil field water	0.3 ac/ft	Limited Poso Creek, Recharge basins
Henry Miller Water District <sup>1</sup>	Y	SWP Kern River	0.3 ac/ft	Limited
Kern County Water Agency Improvement District #4	Y	Kern River SWP	0.3 ac/ft	Yes
Kern Delta Water District	Y	Kings River Kaweah River	0.3 ac/ft	Yes
Lost Hills Water District <sup>1</sup>	N	SWP	n/a	None
North Kern Water Storage District	Y	SWP Kern	0.3 ac/ft	Yes
Rosedale-Rio Bravo Water Storage District	Y	SWP Kern River	0.3 ac/ft	Yes
Semitropic Water Storage District	Y	SWP Poso Creek Metropolitan Water District	0.3 ac/ft	Limited
Tehachapi-Cummings Co. Water District <sup>1</sup>	N	SWP Local streams	*	Yes
Tejon-Castac Water	N	SWP	n/a	None

District <sup>1</sup>		Local streams		
West Kern Water District	N	SWP	n/a	None
Wheeler Ridge-Maricopa Water Storage District	N	SWP Local streams	*	Unknown

<sup>1</sup>Outside the Consolidated CVP Place of Use for Delta water and excluded from this EA and approval process.

<sup>2</sup>Surplus CVP flood water when available.

\*The safe groundwater yield is difficult to quantify. However, the safe yield of groundwater is generally considered to be 1 AF of water for every 1 acre of land.

**Table 3-6 Kern Water Bank Authority**

<b>Kern Water Bank Authority</b>	<b>CVP<sup>2</sup></b>	<b>Other Surface Supply</b>	<b>Ground-water Safe Yield</b>	<b>Ground-water Recharge</b>
Dudley Ridge Water District	N	SWP	*	Yes
Kern County Water Agency	Y	SWP Kern River	*	Yes
Semitropic Water Storage District	Y	SWP Poso Creek	*	Yes
Tejon-Castaic Water District <sup>1</sup>	N	SWP	*	Yes
Westside Mutual Water Company	Y	SWP	*	Yes
Wheeler Ridge-Maricopa Water Storage District	N	SWP Local streams	*	Yes

<sup>1</sup>Outside the CVP Place of Use and excluded from this EA and approval process.

<sup>2</sup>Surplus CVP flood water when available.

\*The safe groundwater yield is difficult to quantify. However, the safe yield of groundwater is generally considered to be 1 AF of water for every 1 acre of land.

**Table 3-7 Kings River Conservation District**

<b>Kings River Conservation District</b>	<b>CVP</b>	<b>Other Surface Supply</b>	<b>Ground-water Safe Yield</b>	<b>Ground-water Recharge</b>
Alta Irrigation District	N	Kings River	*	*
Clark's Fork Reclamation District No. 2069	N	Kings River	*	*
Consolidated Irrigation District	215 Water	Kings River	*	Yes

<b>Kings River Conservation District</b>	<b>CVP</b>	<b>Other Surface Supply</b>	<b>Ground-water Safe Yield</b>	<b>Ground-water Recharge</b>
Corcoran Irrigation District	N	Kings River	*	*
Empire West Side Irrigation District	N	Kings River, SWP	*	*
Fresno Irrigation District	<sup>2, 3</sup>	Kings River, CVP	*	*
James Irrigation District	<sup>2, 3</sup>	CVP via exchange for Kings River	*	*
Kings County Water District	<sup>2</sup>	SWP, Kings and Kaweah Rivers	*	*
Kings River Water District	<sup>2</sup>	Kings River	*	*
Laguna Irrigation District	800 AF/y, <sup>2</sup>	Kings River	*	*
Lakeside Irrigation Water District	<sup>2</sup>	Kings River, St. Johns, Cross Creek	*	Cross Creek, recharge basin
Liberty Water District	<sup>2</sup>	Kings River via Liberty Canal	*	Liberty Canal and recharge basin
Mid-Valley Water District	N	Kings River	*	*
Raisin City Water District	N	Kings River	*	*
Riverdale Irrigation District	N	Kings River	*	*
Salyer Water District	N	0	*	*
Stratford Irrigation District	N	Kings River	*	*
Tranquility Irrigation District	2, 3	CVP via exchange for Kings River	*	*
Tulare Lake Reclamation District No. 761	N	Kings River, SWP	*	*
Burrell Ditch Company	N	Kings River via Murphys Slough	*	*

<b>Kings River Conservation District</b>	<b>CVP</b>	<b>Other Surface Supply</b>	<b>Ground-water Safe Yield</b>	<b>Ground-water Recharge</b>
Corcoran Irrigation Company	N	Kings River via Lakelands Canal	*	*
Crescent Canal Company	N	Kings River via Crescent Canal	*	*
John Heinlen Mutual Water Company	N	Kings River	*	*
Last Chance Water Ditch Company	N	Kings River via Last Chance Ditch	*	*
Lemoore Canal and Irrigation Company	N	Kings River via Lemoore Canal	*	*
Liberty Canal Company	N	Kings River via Liberty Canal	*	*
Liberty Mill Race Company	N	Kings River via Murphys Slough	*	*
Lovlace Water Corporation	N	Kings River South Fork Canal and Tulare Lake Canal	*	*
Peoples Ditch Company	N	Kings River via operations of People's Weir	*	*
Reed Ditch Company	N	Kings River via Murphys Slough	*	*
Southeast Lake Water Company	N	Kings River	*	*
Stinson Canal and Irrigation Company	N	Kings River via Stinson Canal	*	*
Tulare Lake Canal Company	N	Kings River via Tulare Lake Canal	*	*
Upper San Jose Water Company	N	Kings River	*	*

<sup>1</sup>Outside the CVP Place of Use and excluded from this EA and approval process.

<sup>2</sup>Surplus CVP flood water when available.

<sup>3</sup>Long-term CVP Contractor

Mill Creek, Sand Creek, and Wahtoke Creek are tributary to the Kings River and provide conveyance and supplies to some districts.

\*The safe groundwater yield is difficult to quantify. However, the safe yield of groundwater is generally considered to be 1 AF of water for every 1 acre of land.



**Table 3-8** Tulare Lake Basin Water Storage District

Tulare Lake Basin WSD	Kings, Tule, Kaweah, Kern Rivers, Deer Creek, SWP
Angiola WD	605 AF/y SWP if available 15,000 AF/y (5,145 average) Kings River 6,000 AF/y (975 average) Tule River/ Deer Creek 60,000 AF/y (7,787 average) Tulare Lake Flooding 35,000 groundwater
Melga WD	SWP and Kings, Tule, Kaweah Rivers, Kern River

\*The safe groundwater yield is difficult to quantify. However, the safe yield of groundwater is generally considered to be 1 AF of water for every 1 acre of land.

### ***Groundwater***

The usable storage capacity has been estimated to be approximately 24 million AF for the San Joaquin River Hydrologic Region and 28 million AF for the Tulare Lake Hydrologic Region which are the two hydrologic regions overlain by the CV contractors and most of the exchanges. DWR estimated a level of groundwater extraction that would not lower groundwater levels over the long-term (perennial yield) to be approximately 3.3 million AF for the San Joaquin River Hydrologic Region. The perennial yield is 4.6 million AF for the Tulare Lake Hydrologic Region. This perennial yield is directly dependent upon the amount of recharge received by the groundwater basin.

The CVP was developed as a supplemental supply of surface water and to alleviate groundwater overdraft conditions. The overdraft of groundwater is a region-wide problem throughout the lower SJV and although ameliorated to some extent by the import of surface water, all hydrologic basins in the SJV continue to be overdrafted.

Recharge of the semi-confined aquifer in the regions is primarily derived from seepage from streams and canals, infiltration of applied water, and subsurface inflow. The discussion of each of the districts located above in this document includes recharge facilities and groundwater resources. Precipitation on the valley floor provides some recharge, but only in abnormally wet years. Seepage from streams and canals is highly variable depending upon annual hydrologic conditions.

Water districts and landowners located within suitable groundwater basins routinely balance irrigation demands with surface and groundwater through conjunctive use. In wet years the groundwater is recharged and in dry years groundwater is extracted. Water districts and

landowners located in areas with little to no groundwater sources would seek surface water supplies to purchase if a deficit in water supplies occurs.

In most cases, the water districts do not have authority over the groundwater usage. Groundwater is pumped from privately owned wells and is not under the control of the water district. The water districts strive to provide surface water, when available, at affordable prices to curb groundwater pumping. The groundwater levels, supplies and safe yield are difficult to quantify. This is due to the variances in soils types, proximity of the districts to the foothills, or water table gradients which results in groundwater flowing into and out of the aquifer underneath districts. Generally, the groundwater safe yield is approximately 1 AF per acre of land. In some years and due to the hydrogeology underlying a specific district the safe yield may be 0 AF. It is not uncommon for two water districts to enter into agreements for exchanges or transfers of surface water to off-set groundwater migration between the two districts. Water districts and landowners with suitable groundwater basins routinely balance irrigation demands with surface and groundwater through conjunctive use. In wet years the groundwater is recharged and in dry years groundwater is extracted.

### ***Facilities for Delivery of Water***

Conveyance facilities within the project area include the Banks and Jones Pumping Plants (Banks and Jones respectively), the Delta Mendota Canal (DMC), the FKC, the Aqueduct, the CVC, Kern Water Bank canal, Kings, Tule, Kaweah and Kern rivers in addition to small streams.

The water districts have constructed extensive water conveyance systems to provide water throughout their service areas. Water is conveyed through the extensive networks of canals and aqueducts to provide water where needed.

### ***Pumping from the Delta***

DWR has a priority system for pumping SWP and CVP water supplies at Banks. CVP water supplies have a lower priority compared to SWP uses. Prior to pumping CVP supplies at Banks (Joint Point of Diversion (JPOD)) there are environmental and water quality plans that must be submitted and approved and criteria that must be met. Under certain conditions, DWR does not have an opportunity to pump and convey the annual allocation of water supplies to the CV contractors or pumping and conveyance may occur at a time that is outside of the growing season.

### ***Banks Pumping Plant***

Located in the Sacramento-San Joaquin Delta, Banks lifts water 244 feet from the Clifton Court Forebay into the beginning of the Aqueduct.

### ***Jones Pumping Plant***

Jones consists of an inlet channel, pumping plant, and discharge pipes. Water in the Delta is lifted 197 feet into the DMC. Each of the six pumps at Tracy is powered by a 22,500 horsepower motor and is capable of pumping 767 cfs. Power to run the huge pumps is supplied by CVP powerplants. The water is pumped through three 15-foot-diameter discharge pipes and carried about 1 mile up to the DMC. The intake canal includes the Jones Fish Screen, which was built to intercept downstream migrant fish so they may be returned to the main channel to resume their journey to the ocean. Although CV contractor supplies are predominantly pumped at Banks, infrequently, if pumping capacity exists after all other CVP needs have been met (typically in the spring), CV contractor water supplies have been pumped at Jones and moved over the SWP at O'Neill Forebay for conveyance to the CVC.

### ***Delta-Mendota Canal***

The DMC carries water southeasterly from the Jones along the west side of the SJV for irrigation supply, for use in the San Luis Unit, and to replace San Joaquin River water stored at Friant Dam and used in the Friant-Kern and Madera systems. The canal is about 117 miles long and terminates at the Mendota Pool, about 30 miles west of Fresno. The initial diversion capacity is 4,600 cfs, which is gradually decreased to 3,211 cfs at the terminus. It also connects with O'Neill Forebay near San Luis Reservoir where water can be pumped from the DMC into either San Luis Joint Use Facilities a part of which is a shared canal named the San Luis Canal for the CVP and the Aqueduct for the SWP.

### ***O'Neill Forebay***

These joint Federal/State facilities are located on San Luis Creek, 2.5 miles downstream from San Luis Dam. O'Neill Dam, completed in 1967, is a zoned earthfill structure with a height of 87 feet and a crest length of 14,300 feet. The forebay, with a capacity of 56,400 AF, is used as a hydraulic junction point for Federal and State waters. The top 20,000 AF acts to re-regulate storage necessary to permit off-peak pumping and on-peak generation by the main San Luis Pumping-Generating Plant.

The O'Neill Forebay Inlet Channel extends 2,200 feet from the DMC to deliver water to the O'Neill Forebay. Six pumping units of the O'Neill Pumping-Generating Plant lift water 45 to 53 feet into the forebay.

### ***Friant-Kern Canal***

The FKC is operated by the FWA to convey stored water supplies from the San Joaquin River to CVP water districts in Fresno, Tulare and Kern Counties through the eastern portion of the SJV. The FKC extends 152 miles south from Friant Dam in Fresno County to the Kern River in Kern County four miles west of Bakersfield.

### ***California Aqueduct***

The State of California constructed the Aqueduct as part of the SWP. Waters from the Aqueduct flow out of the Delta near the City of Tracy to San Bernadino and Riverside into Lake Perris. SWP contractors take delivery from the CVC and/or direct diversion from the Aqueduct. The SWP typically delivers approximately 1.36 million AF to the SJV per year. Contracts executed in the early 1960s established the maximum annual water amount (supply) that each SWP long-term contractor may request from the SWP.

Recovered groundwater that is discharged into the Aqueduct, can be delivered to water districts or exchanged with the DWR. Exchanges with the DWR can be simultaneous, or delayed exchanges. In a simultaneous exchange water delivered from the Aqueduct to an upstream district at the same time the recovered groundwater is transported to the Aqueduct. With a delayed exchange, water might be delivered by the DWR to the receiving district from storage before or after the recovered groundwater is received.

### ***Cross Valley Canal***

The CVC extends from the Aqueduct near Tupman to Bakersfield. It consists of four reaches which have capacities ranging from 890 cfs through the first two pumping plants to 342 cfs in the unlined extension near Bakersfield.

The canal is a joint-use facility operated by the Kern County Water Agency for the CVC participants. Water can be conveyed through the CVC to the Kern Water Bank, the City of Bakersfield, the Berrenda Mesa Property, the Kern River channel, Pioneer Banking project and the various member units recharge sites.

The CVC is also used to convey banked groundwater after it is recovered. Once in the CVC, recovered water can be delivered to CVC participants in exchange for water in the Aqueduct. During periods when water is not available for exchange, the CVC can be operated in reverse flow. When operated in reverse flow, water flows from the CVC directly into the Aqueduct. In 1991, water levels in the Aqueduct were low enough for the flow to be by gravity. When water levels in the Aqueduct are too high for gravity flow, the water must be pumped into the Aqueduct.

### ***Kern River/Alejandro/Outlet Canals***

Water from the FKC, the CVC, or from the Kern River can be conveyed in the Kern River channel or in the Kern River Canal to the Pioneer Banking project or other recharge areas. Conveyance of water in the Kern River Canal requires an agreement with the City of Bakersfield. Conveyance of water in the Alejandro Canal requires an agreement with the Buena Vista Water Storage District.

The Kern River Canal can also be used to convey water from the Kern River to the California Aqueduct directly via the Alejandro Canal, the Buena Vista Aquatic Lakes and Outlet Canal and a pumping plant, or indirectly via an exchange.

It should be noted that depending on groundwater pumping operations, water in the Buena Vista Aquatic Lake may contain high concentrations of arsenic. These high concentrations are caused when groundwater from nearby wells is pumped into the Buena Vista Aquatic lakes for agricultural use and to make up evaporation losses.

### ***Kern River***

The US Army Corps of Engineers (Corps) operates Isabella Dam on the Kern River. Flows downstream of the dam are monitored and managed by the Kern River Watermaster. Minimum flow requirements and diversions off the Kern River are coordinated with water purveyors and Kern River Watermaster.

### ***Kern Water Bank Canal***

The Kern Water Bank Canal is a bi-directional canal constructed by the Kern Water Bank Authority. The canal has a single pumping plant for delivering water for recharge. The forward flow capacity is 950 cfs. Reverse flow capacity is approximately 650 cfs. The canal is used to convey SWP water and other waters from the Aqueduct to the local banking projects for groundwater recharge. The canal is also used to convey pumped groundwater during a surface water short year, back to the Aqueduct, either directly or by exchange, to water districts for a supplemental water supply.

### ***Kings River***

The Corps is the operator of Pine Flat Dam and releases water for flood control. During the irrigation season, (normally June through August) water is released from behind Pine Flat Dam and the Kings River is controlled by the Kings River Water Association. In wet years the Kings River may flow to the Tulare Lake Basin. Only in very wet seasons does the Kings River flow north into Fresno Slough and into the San Joaquin River. The average annual runoff for the Kings River is approximately 1.7 million AF. The Kings River is managed similarly to a canal system providing water for irrigation and to meet flow requirements for fish and wildlife purposes.

### ***Kaweah and St. Johns Rivers***

The Corps also operates Terminus Dam on the Kaweah River for flood control and water supply. Downstream of Terminus Dam, the St. Johns River and Lower Kaweah River divides from the Kaweah River at McKay Point. The St. Johns River becomes Cross Creek north of Goshen. A few tributaries such as Dry Creek and Yokohl Creek, flow into the Kaweah and St. Johns Rivers. The Kaweah River ceases to be an identifiable stream south of Highway 245, and the river

branches into Mill Creek and other major and minor streams creating a delta. During the irrigation season (June through August) the Kaweah Delta Water Conservation District manages the Kaweah River irrigation flows similarly to a canal facility to meet demands and on behalf of the watermaster for the Kaweah and St. Johns Rivers Association. The average annual runoff of the Kaweah River is 430,000 AF, and does not include various smaller creeks. The St. Johns River was permanently established during the fresher of 1861-62 and branches off the Kaweah River. The Lower Kaweah River, St. Johns River and smaller creeks are used for conveyance of irrigation water to ditch companies and water districts.

### ***Tule River***

The Tule River watershed above Success Dam is a fan shaped area containing 245,000 acres, ranging in elevation of 550 feet at Success Dam to a maximum of 10,000 feet, with less than 10 percent of the watershed above elevation 7,500 feet. The Tule River above Success Reservoir is composed of three channels, the North Fork and the Middle Fork that join just above the community of Springville, and the South Fork that passes through the Tule River Indian Reservation before entering Success Reservoir at State Route 190.

Success Dam, a Corps project currently has a storage capacity of 82,300 AF, of which 75,000 AF is reserved for flood control and irrigation water storage. The remaining storage, 7,300 AF, was set aside for a silt and recreation pool.

The Tule River runoff at Success Reservoir is extremely variable subject to precipitation in the watershed. Records of the Tule River runoff for the past 101 years are available from water year 1904 through water year 2004. The average annual runoff of the Tule River is 141,630 AF. Of the past 101 years, 1977 was the driest year with a runoff of 15,810 AF, and 1983 was the wettest year with 615,090 AF.

The Tule River Association, made up of all water rights holders at and below Success Reservoir, administers the water and storage rights at and below Success Dam. The Corps controls storage in Success Reservoir through a Flood Control Diagram that limits irrigation storage during the period November 15th to May 1st of the following year. Irrigation water storage operations during the remainder of the year are controlled by the Tule River Association Watermaster.

The Tule River gross service area below Success Dam covers about 320,000 acres, of which 140,000 acres are within Tulare County, and 180,000 acres are within the Tulare Lake Basin of Kings County. Of the gross service area, approximately 240,000 acres are developed in irrigated agriculture with the remainder in urban and non-agriculture uses.

The main channel of the Tule River below Success Dam traverses about 50 miles to the pocket of the Tulare Lake Basin where the river joins the terminus of the South Fork of the Kings River.

The Tule River bifurcates at Road 192 and a South Fork channel traverses 12 miles along with a third Middle Fork channel of 3 miles, all northerly of the community of Woodville.

### **3.1.2 Environmental Consequences**

#### ***No Action Alternative***

**Surface Water** There may be negative impacts to water resources within the CV contractor's service areas under the No Action Alternative. No new supplies of water would be generated as the same amounts of water that have historically been pumped would continue and no additional water supplies would be diverted from reservoirs or rivers. The CVPIA Programmatic EIS (PEIS) and the biological assessment for the continued long-term operation of the CVP and SWP assumed the 128,300 AF/y of water would be diverted, pumped from the Delta and conveyed every year. Exchange volumes may be reduced however.

Contract deliveries and exchanges have been occurring annually since the mid 1970s. Therefore the impacts to environmental resources have already been assessed for the O&M activities of the CVP and SWP and are part of the No Action Alternative.

Reclamation would prepare separate environmental documents each instance an Article 5 exchange is proposed to examine the impacts to environmental resources beyond the diversions, pumping and conveying of this water in CVP and SWP facilities. The timing for preparation of environmental and administrative review could exceed the window of opportunity for the exchange resulting in reduced flexibility in the management of the CV contractor's CVP water in order to compete with neighboring farmers. The No Action Alternative would likely result in increases of water transfers and higher prices for the CV contractors. The exchangees (others) may not receive the benefit of the additional water supplies for beneficial uses including growing higher value crops, groundwater recharge, groundwater banking or transfers. Less water may be available in the SJV if the exchange requests are not approved and CVP water is not conveyed under Article 55. However, the CV contractors could continue to exchange water with AEWSO to the extent possible or transfer the water to other water districts south of the Delta.

**Groundwater** The No Action Alternative is a continuation of exchanges between the CV contractors and AEWSO, as in the past. AEWSO is located in Kern County and exchange arrangements could result in temporary increases to the local groundwater as in the past.

Reclamation could still approve exchange arrangements between the CV contractors and other exchangees but only after completing environmental and administrative review. The separate environmental reviews could exceed time frames for approvals for the exchanges since DWR has a short window of opportunity to pump and convey this water. Therefore, the exchangees may not have the benefit of using this water for groundwater recharge or banking this water for later use during dry seasons to benefit the overdraft conditions in the SJV. The No Action Alternative

could result in the CV contractors pumping groundwater or extracting groundwater from banking facilities if adequate surface water supplies are not available for purchase or exchange opportunities are limited.

Exchanges with AEWS D from multiple CV contractors are only feasible when there is a relatively large Class 2 declaration so that AEWS D has adequate supplies to exchange. AEWS D only has a Class 1 supply of 40,000 AF/y.

### ***Proposed Action***

**Surface Water** The 128,300 AF/y of water involved in the exchanges are supplies already allocated and no additional water supplies would be diverted from rivers or lakes. No new construction or points of diversions would be required. However, changes in timing and locations of when and where water is diverted could occur. The rivers in the project area are managed for flood control and irrigation similar to canals.

Releases from the dams occur in response to high water flows or to meet irrigation demands and minimum flow requirements to benefit fish, wildlife and recreational uses. Typically, minimum flow requirements are maintained while the hydrological conditions dictate the amount of water diverted to meet irrigation demands. Telemetric systems are used to record flows and the watermasters coordinate with the water districts to open or close their gates for diversions of water on a real-time basis to ensure appropriate flows are maintained throughout the course of the rivers. The timing and locations of diversion vary from year-to-year due to hydrological conditions, fluctuating marketing conditions, transfers and/or exchanges of water with or without the proposed Article 5 exchanges. The proposed exchanges would not result in significant impacts to third parties, water quality, quantity, flows or temperature. The proposed exchange arrangements would not interfere with deliveries to other water purveyors or meeting minimum flow requirements.

Water diverted from the Delta is typically of lower quality compared to sources on the east side of the SJV. The proposed exchanges would not result in deliveries of additional water supplies from new sources or origins of water. The maximum amount of water exchanged would be up to 128,300 AF/y and would be sufficiently diluted in the canals. Deliveries of water supplies in the conveyance facilities occur within the capacities and operations of the canals although the destination and label on the water may differ.

Changes in water flows or temperatures in the canals and Aqueduct would not result in significant impacts to water quality or quantity. The O&M of the CVP and SWP were addressed in the CVPIA PEIS and the biological assessment for the continued long-term operation of the CVP and SWP included the entire 128,300 AF/y of the CV contractor's water supplies. This water was assumed to be pumped and conveyed in each year for deliveries via exchanges to the CV contractors. The proposed Article 5 exchanges would not result in any impacts to diversion



from the Delta or pumping and conveyance of this water beyond those already addressed in the CVPIA PEIS and the biological assessment for the continued long-term operation of the CVP and SWP.

This EA addresses the conveyance of the CV contractor's CVP water under Article 55 of the SWP contracts when combined with Article 5(a) of the CVP contracts. The conveyance of CVP water under Article 55 could result in the CV contractors receiving a higher rank on the SWP hierarchy for pumping. Pumping and conveying water under Article 55 does not result in additional water conveyed. Reclamation policy limits the amount of CV contractors supplies conveyed under Article 55 to be that of each CV contractors' SOD allocation to prohibit impact to the CVP as whole which has a lower JPOD priority than CV contractors have. DWR would pump this amount of water with or without the proposed Article 5 exchanges with others. The proposed exchanges, pumping, conveyance, and approvals are subject to applicable laws and policies including the Reclamation's policy that decisions made would not harm other CVP contractors. No significant changes in water quantities, diversions, pumping or conveyance practices would occur.

The CV contractor's CVP water supply is unreliable in any year due to hydrological conditions and SWP pumping priorities. Therefore, in some years the CV contractors do not receive any of their CVP water supplies. The CV contractors seek other sources of water or management practices, including purchases of surface water, extracting groundwater, growing less water intensive crops, or fallowing lands.

Historically, the untimely delivery of CV contractor water has resulted in AEWS D receiving the water when its value is low. This same amount of water is of much higher value at such time this water is exchanged back to the CV contractors due to timing and demands. The value and timing of the water is considered in exchange agreements between the parties. Therefore, the CV contractors are seeking to enter into exchange arrangements that will benefit AEWS D and/or others in order to obtain water at a reasonable price for the CV contractors' landowners to compete with other agricultural growers. In lieu of paying a higher price for the water when it is exchanged to the CV contractors, the exchange arrangements commonly allow for an imbalanced exchange of 2009 CV contractors' water supplies to compensate for the value of the water when it is delivered. Similar exchange arrangements are anticipated for the "other" exchange partners. The exchange arrangements are developed between willing buyers and sellers with mutually agreeable terms. A portion of the water (up to 50 percent) would be retained by the exchangee and 50 percent would be delivered to the CV contractor when it is needed.

Under the exchange arrangements, the water management practices for the CV contractors would not change dramatically. CV contractors may receive between 100 and 50 percent of their CVP supply when it is needed. The CV contractors would receive the benefit of having lower priced water with deliveries on a demand schedule to allow for advanced planning and growing of crops

on existing agricultural lands in order to compete with neighboring farmers. However, the availability of this water is contingent upon DWR having a window of opportunity to pump the water.

Under the Proposed Action and imbalanced exchanges, the exchangees could receive an increase of no more than 64,150 AF of water. This water could be used to grow higher value crops, groundwater recharge, banking for later use in dry years, subsequent transfers within the Place of Use including selling to the Environmental Water Account and/or municipal and industrial uses. The increase of 64,150 AF is small (approximately 2 percent) compared to the over 3 million AF/y of the overall water supplies for the water purveyors and would not lead to significant impacts to surface water quality or quantity. The same amount of water would continue to be utilized within the lower SJV for beneficial uses. Subsequent transfers, recipients of the banked water, changes in the places or purpose of the use of the water would require environmental review, and compliance with the Reclamation Reform Act, water rights permits and applicable federal, state and local laws prior to approval. Reclamation does not have jurisdiction over non-CVP supplies.

Under the Proposed Action, the exchanger(s) could receive less water than their full contract supply and allocation. However, receiving a reduced amount of water versus supplies outside of the growing season would provide better use and management of this water. This reduction would not result in major impacts for the exchanger(s) since their water supplies are intermittent and unreliable.

**Groundwater** The SJV is in overdraft conditions. A portion of the water applied on irrigated lands seeps into the groundwater. However, groundwater seepage is slow and would not lower the expense of pumping groundwater. The water districts strive to provide surface water at affordable prices to discourage groundwater pumping. The Proposed Action could provide short-term relief to groundwater quality and quantity.

The Proposed Article 5 exchanges would not result in significant reductions of water supplies in the CV contractor's service areas since this water has been delivered on an intermittent basis in the past. Kern Tulare Water District, Alpaugh Irrigation District and Atwell Water District are located in areas with inadequate groundwater supplies and unsuitable for groundwater recharge or in-district banking.

Due to the availability of groundwater storage facilities in Kern County, it is likely that water districts located in the Kern County Basin would become exchange partners with the CV contractors. Therefore it is likely groundwater quality and quantity would improve temporarily in Kern County. The groundwater is typically stored and extracted when surface water supplies are unavailable and distributed to the "owners" of the storage space in the groundwater banking

facilities. As stated earlier, the existing conveyance facilities allow for water to be conveyed to the exchangers or exchangees throughout the lower SJV. The Proposed Action would provide an increase of water to areas suitable for groundwater recharge providing an improvement of managing available water supplies and overall benefit to the region-wide overdraft conditions until the water is extracted in dry years. Therefore the Proposed Action would not result in long-term or significant impacts to groundwater quality or quantity.

### ***Cumulative Effects***

The Proposed Action would not contribute to, or inhibit, the renewal of CVP long-term contract renewals for other CVP contractors.

The reservoirs, rivers and creeks in the lower SJV associated with the Proposed Action are managed for flood control and agricultural supplies. Diversions of water occur based on the hydrological and environmental conditions. During wet seasons and high water flows, surplus water supplies are released and, if possible, marketed to quickly disperse this water to avoid flooding and damage downstream in the rivers. The Proposed Action would not interfere with deliveries, operations or cause significant adverse changes to the rivers, creeks or conveyance facilities.

The conveyance facilities and river systems in the lower SJV are interconnected and allow for a myriad of transfers, exchanges, contract assignments, and conveyances of water via Warren Act contracts, Operational Contracts or Article 55 of the SWP. The conveyance of water under these water service options are subject to available capacity, meeting primary requirements, and environmental reviews.

The CVPIA envisioned improved water management options and expanded the opportunities for transfers to occur to encourage efficient water management and conservation. Transfers of CVP water require approval by Reclamation's Contracting Officer. Transfers of CVP water undergo a rigorous checklist to determine whether there are any immitigable third party impacts, as well as a public review period under NEPA and Section 3405(a) of the CVPIA. CVP water transfers outside the respective places of use or changes in points of diversions require prior approval by the State Water Resources Control Board. Reclamation does not have approval authority over transfers of non-CVP water. Under State law, transfers are prohibited if they would result in unmitigated third party impacts regardless of the type of water rights held by the seller. SWP contractors are restricted under Table A and the Monterey Agreement to transfer SWP water. DWR manages a "Turn Back Pool" for SWP contractors who do not need to deliver all of their SWP water supplies and DWR redistributes this water. Riparian water rights are restricted to use of the water that can be reasonably used on those lands appurtenant to stream courses and transfers are prohibited. Transfers out of the Kaweah Basin are not permitted without proper

consent with the Kaweah Basin water interests. All “out of basin” transfers are reviewed for applicable laws prior to approvals.

It is recognized the exchangee(s) could take deliveries of their other water supplies in addition to receiving the 64,150 AF/y of CVP water. The use of CVP water within the exchangee’s service areas could result in other sources of water freed up, of which, Reclamation does not have approval authority. The freed up water supplies could be sold providing a financial benefit to the exchangee(s). The Cumulative Effects section below discusses the other sources of water in addition to the CVP water including transfers and other water service actions. The Corps has increased the capacity of Lake Kaweah, which is created by Terminus Dam on the Kaweah River. The dam enlargement project would raise the gross pool by 21 ft and add 42,600 AF of flood storage space in Lake Kaweah. The plan would increase the levels of flood protection to the 70-year event for downstream communities and the 3.2-year event for the Tulare lakebed. An additional average annual irrigation water supply of 8,400 AF could be stored in the reservoir. (Kaweah River Basin Investigation and Draft Environmental Impact Statement, Corps). The Proposed Action is unrelated to the project modifications and would not contribute to or hinder decisions to the enlargement project. The spillway modification project increases water supplies for agricultural or marketing purposes. Transfers of Kaweah River water supplies outside of the Kaweah Basin are currently prohibited with the exception of high flood flows. The Proposed Action, when added to the modification to the lake enlargement project, would not increase or decrease water allocations and would not contribute to cumulative effects to rivers or reservoirs.

The Proposed Action would not contribute to or interfere with flood control management and operations. The Proposed Action and imbalanced exchanges would not increase or decrease the availability of flood water nor inhibit or contribute to decisions to accept or reject this source of water.

Kern County Water Agency and CV contractors prepared an Environmental Impact Report under CEQA (SCH #2004-81183) for the expansion of the CVC. The objective of the CVC expansion project is to capture high water flows (surplus water). The CVC will be increased by 500 cfs. This water is available on a short-term and unreliable basis. The CVC expansion project would allow this water to be conveyed in the CVC and delivered to groundwater banks for later use in dry seasons. The CVC enlargement project includes additional pumps and turnouts for deliveries of this water to groundwater banks. In wet years, the project will allow for water to be conveyed and recharged along both sides of the Kern River. In dry years the stored groundwater will be recovered through a series of operationally linked groundwater recovery wells. The expansion project would not change capacity in the FKC to allow for more water to be backed up to the CV contractors. The expansion project will not change pumping or diversions of water from the Delta to improve water supplies to the CV contractors. The CVC expansion project would occur

with or without the proposed Article 5 exchanges. The Article 5 exchanges when added to the expansion project would not result in cumulative impacts.

The North Kern Water District is also constructing a pipeline to its groundwater facilities to accommodate the surplus water, when available. The turnout facilities could result in improved capabilities for the Article 5 exchanges water to be conveyed to the existing groundwater bank facilities. The turnouts may reduce the need to pump the exchange water over longer distances providing a financial benefit to the water districts and benefit to power users. The CV contractor's water has historically been conveyed across the length of the CVC to AEWS and would not contribute to adverse cumulative impacts.

Kern-Tulare Water District has completed the approval process for two separate groundwater banking projects with Rosedale-Rio Bravo Water Storage District and North Kern Water Storage District. The main source of water for the banking projects is surplus CVP water, when available. Kern-Tulare Water District does not have adequate groundwater storage capacity. It is possible the Article 5 exchange water would be banked in these facilities until such time Kern-Tulare Water District needs this water. The Article 5 exchanges, when added to the groundwater banking projects would not contribute to significant cumulative impacts to water resources since this water is contingent upon the opportunity for DWR to pump and convey this water.

## **3.2 Land Use**

### **3.2.1 Affected Environment**

A detailed discussion of the land uses in each of the water districts, both exchangers and exchangees is contained in the incorporated documents and in Appendices C thru E. Generally, the land use is mainly comprised of irrigated agriculture. Cities along the Highway 99 corridor are expected to expand over the next years. These cities include Fresno, Visalia, Delano and Bakersfield.

### **3.2.2 Environmental Consequences**

#### ***No Action Alternative***

Under the No Action Alternative available water supplies would be applied to existing agricultural lands. Decisions to fallow lands would be based on available water supplies, hydrological conditions, constraints of water deliveries, and fluctuating agricultural marketing strategies. Due to reduced water supplies if exchange arrangements were not in place, there may be a small reduction in farmed acres.

#### ***Proposed Action***

Land use would not change under the exchange arrangements. The CVP water is a supplemental supply. The CV contractors have managed their water supplies to meet demands in the past when DWR has not had the opportunity to pump the water. Receiving a reduced supply of water when

DWR has the opportunity would not result in significant changes in cropland production since an increment of this water would be provided by the exchangee to the CV contractor during the irrigation season.

Although it is possible the exchangee would receive an increase of 64,150 AF of water, this would occur only in years when DWR has a window of opportunity to pump this water or when Article 55 conveyance arrangements are utilized. The conveyance of water under Article 55 is subject to capacity in the Aqueduct and meeting all SWP requirements. Due to the unreliability and unavailability of this water, the Proposed Action would not lead to long-term land use changes. The water supplies are variable and do not provide a reliable or consistent amount for landowners to make long-term land use changes. No native grasslands or shrub land would be tilled or cultivated. Water would be delivered to established croplands and used for irrigation purposes on lands irrigated within the last three years or for existing M&I uses. Exchange arrangements that result in short-term imbalanced exchanges could result in short-term fallowing of lands until such time the water is delivered. Imbalanced exchanges may involve monetary compensation to allow purchases of other supplies. Some lands may be fallowed if surface water supplies are not available for purchase and groundwater resources are inadequate. Crop patterns could change. However, no increases in agricultural lands would occur without environmental reviews.

The exchanges would occur within existing facilities. Exchanges requiring additional construction to convey this water are not within the scope of this EA and would undergo separate environmental review.

### ***Cumulative Effects***

The home prices in the lower SJV and project area are lower compared to other regions in California. This and other economical forces are driving factors for land use changes from agricultural to urban uses. These changes are long-term and require approvals from the Local Area Formation Committee, changes in City or County General Plans and undergo environmental reviews. Changes in the CVP Contractors' boundaries and service areas undergo environmental review under NEPA and approval by Reclamation. Boundary change requests from the CVP Contractors for Reclamation's approval are often misconstrued. Reclamation does not have land use change approval authority. However, Reclamation must determine whether boundary change requests would result in inconsistency with the Reclamation Reform Act, water rights permits or other laws and regulations. During this determination and approval process, Reclamation evaluates any proposals for boundary changes as it relates to the use of the water and prepares environmental documents in accordance with NEPA prior to Reclamation's approval.

As stated earlier, a myriad of water service transactions routinely occur within the project area. The temporary fallowing of lands could occur especially during dry and drought seasons. The

various water service transactions are for the efficient management of water resources and do not contribute to long-term or reliable water supplies that would result in land use changes.

The exchange water could be diverted through the facilities for the proposed groundwater banking projects for Kern Tulare Water District with Rosedale Rio-Bravo Water Storage District and North Kern Water Storage District. The CVC expansion project includes turnouts that could be used to divert the exchange water under the Proposed Action. The exchange water is unreliable and in some years is not pumped and conveyed. Therefore, the Proposed Action would not lead to decisions to construct additional groundwater facilities or contribute to major cumulative impacts to land uses.

### **3.3 Biological Resources**

#### **3.3.1 Affected Environment**

The documents incorporated by reference contain a more detailed description of biological resources in the districts' service areas and boundaries. The CVP contractors have already undergone consultation with Service and NMFS and are implementing measures in the applicable BO. Kern County Water Agency has an existing Habitat Conservation Plan for portions of its service area.

##### ***Threatened, Endangered and Sensitive Species***

A list of endangered, threatened and sensitive species that may occur within the 7.5 minute United States Geological Survey quadrangles that underlie or touch the action area was obtained from the Service's Endangered Species Lists website at [http://sacramento.fws.gov/es/spp\\_list.htm](http://sacramento.fws.gov/es/spp_list.htm) on February 11, 2009 (document number: 090212102604). The Service's database was last updated January 29, 2009. Additional data was obtained from the California Department of Fish and Game's California Natural Diversity Database.

The list was compiled from the following counties: Fresno, Kings, Kern and Tulare.

**Table 3-9** Federally Listed Threatened and Endangered Species that may Occur Within the Action Area

COMMON NAME	SCIENTIFIC NAME	FEDERAL STATUS	CRITICAL HABITAT
Bakersfield cactus	<i>Opuntia treleasei</i> (= <i>Opuntia basilaris treleasei</i> )	Endangered	None
blunt-nosed leopard lizard	<i>Gambelia sila</i>	Endangered	None
Buena Vista Lake shrew	<i>Sorex ornatus relictus</i>	Endangered	Designated*
California condor	<i>Gymnogyps californianus</i>	Endangered	Designated*
California jewelflower	<i>Caulanthus californicus</i>	Endangered	None
California red-componentged frog	<i>Rana aurora draytonii</i>	Threatened	Designated*
California tiger salamander	<i>Ambystoma californiense</i>	Threatened	Designated*
Central Valley steelhead	<i>Oncorhynchus mykiss</i>	Threatened	Designated
Conservancy fairy shrimp	<i>Branchinecta conservation</i>	Endangered	Designated
fleshy (=succulent) owl's-clover	<i>Castilleja campestris</i> ssp. <i>succulenta</i>	Threatened	Designated*
Fresno kangaroo rat	<i>Dipodomys nitratoides exilis</i>	Endangered	Designated
giant garter snake	<i>Thamnophis gigas</i>	Threatened	None
giant kangaroo rat	<i>Dipodomys ingens</i>	Endangered	None
hairy Orcutt grass	<i>Orcuttia pilosa</i>	Endangered but not in action area	Designated
Hartweg's golden sunburst	<i>Pseudobahia bahiifolia</i>	Endangered	None
Hoover's spurge	<i>Chamaesyce hooveri</i>	Threatened	Designated*
Keck's checker-mallow (=checkerbloom)	<i>Sidalcea keckii</i>	Endangered	Designated
Kern mallow	<i>Eremalche kernensis</i>	Endangered	None
Kern primrose sphinx moth	<i>Euproserpinus euterpe</i>	Threatened	None
Lahntan cutthroat trout	<i>Oncorhynchus</i> (= <i>Salmo</i> ) <i>clarki henshawi</i>	Threatened	None
least Bell's vireo	<i>Vireo belli pusillus</i>	Endangered	Designated
Little Kern golden trout	<i>Oncorhynchus mykiss</i> (= <i>aguabonita</i> ) <i>whitei</i>	Threatened	Designated
longhorn fairy shrimp	<i>Branchinecta longiantenna</i>	Endangered	Designated
Mariposa pussy-paws	<i>Calyptridium putchellum</i>	Threatened	None
Paiute cutthroat trout	<i>Oncorhynchus</i> (= <i>Salmo</i> ) <i>clarki seleniris</i>	Threatened	None
palmate-bracted bird's-beak	<i>Cordylanthus palmatus</i>	Endangered	None
San Benito evening-primrose	<i>Camissonia benitensis</i>	Threatened	None
San Joaquin adobe sunburst	<i>Pseudobahia peirsonii</i>	Threatened	None
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	Endangered	None
San Joaquin Valley Orcutt grass	<i>Orcuttia inaequalis</i>	Endangered	Designated*
San Joaquin woolly-threads	<i>Monolopia congdonii</i>	Endangered	None
Sierra Nevada (=California) bighorn sheep	<i>Ovis canadensis californiana</i>	Endangered	None
southwestern willow flycatcher	<i>Empidonax trailli extimus</i>	Endangered	Designated



COMMON NAME	SCIENTIFIC NAME	FEDERAL STATUS	CRITICAL HABITAT
Springville clarkia	<i>Clarkia springvillensis</i>	Threatened	None
Tipton kangaroo rat	<i>Dipodomys nitratooides nitratooides</i>	Endangered	None
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	Threatened	Designated
vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	Threatened	Designated*
Vernal pool tadpole shrimp	<i>Lepidurus packardi</i>	Endangered	Designated
Western snowy plover	<i>Charadrius alexandrinus nivosus</i>	Threatened	None

\*Denotes critical habitat inside the action area.

The vernal pool species critical habitat around the County of Fresno Service Area #34 (CSA#34) consists of units designated for the following species: SJV Orcutt grass (*Orcuttia inaequalis*), vernal pool fairy shrimp (*Branchinecta lynchi*), and fleshy (succulent) owl's-clover (*Castilleja campestris* ssp. *succulenta*). Unit #2 of the South San Joaquin Region of California tiger salamander (CTS) critical habitat also overlaps the County of Fresno Service Area #34 (CSA #24) area. There are 1,561 acres of CSA #34 within the SSJ-2 unit for CTS, and 1,294 acres within the vernal pool units.

The Tri-Valley and Hills Valley Water Districts also are partially within CTS critical habitat. There are 243 acres of Tri-Valley and 792 acres of Hills Valley overlapped by the boundaries (for a total of 1,035 acres). There are 396 acres of the Stone Corral Irrigation District overlapped by the vernal pool critical habitat.

The critical habitat consists of undeveloped lands within these areas. Reclamation has determined that no delivery of CVP water to these lands would be allowed unless and until the landowner can demonstrate compliance with the ESA, including consultation with the Service, for the critical habitat.

Designated or proposed Critical habitat for the Fresno kangaroo rat (*Dipodomys nitratooides exilis*), California Condor (*Gymnogyps californianus*), vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardi*), Hoover's spurge (*Chamaesyce hooveri*), San Joaquin Orcutt grass (*Orcuttia inaequalis*), and CTS also occurs within the action area. The California Condor, though extremely rare throughout its range, may occasionally forage over the action area. The Fresno kangaroo rat has not been recorded in Fresno County since 1992 and may be extirpated from critical habitat within the action area. Vernal pool fairy shrimp critical habitat within the action area is restricted to a few locations in Kings and Tulare counties. Critical habitat for vernal pool tadpole shrimp, Hoover's spurge and San Joaquin Valley orcutt grass within the action area is confined to a small number of areas in Tulare County. Six units of the proposed critical habitat for the CTS are located within or near the action area.

Habitat loss and degradation affecting animals and plants occurs within the action area and is projected to continue to affect special-status species in the southern SJV. However, actions taken by Reclamation, in concert with protections afforded by regional conservation plans such as the Metropolitan Bakersfield Habitat Conservation Plan and the Kern Water Bank Habitat Conservation Plan/Natural Community Conservation Plan, ameliorate such adverse effects and play a key role in achieving the goal of maintaining and preserving special-status species and their native habitats.

### **3.3.2 Environmental Consequences**

#### **No Action Alternative**

The No Action Alternative is similar to the Proposed Action. The same amounts of water would be diverted from rivers and reservoirs based on hydrological conditions. Deliveries would occur in existing facilities. The operations of the CVP and SWP would continue as in the past within constraints and limitations. Croplands would remain the same. Decisions to fallow or not fallow lands would be based on hydrological and agricultural marketing conditions. Reclamation could prepare separate EA reviews for each proposed exchange request. However, the timing for environmental reviews could exceed beyond the time constraints to implement an exchange arrangement.

#### **Proposed Action**

The aspect of the Proposed Action that is of greatest concern environmentally is the potentially unbalanced nature of the exchanges, which could result in either a temporary or permanent net amount of water being delivered to the participating Friant CVP or non-CVP contractors. The 128,300 AF/y of water that would be involved in the exchanges are supplies already allocated to the CV contractors and no additional water supplies would be diverted from rivers or lakes. No new construction or points of diversions would be required. However, slight changes in timing and locations of when and where water is diverted could occur. The rivers in the project area are managed for flood control and irrigation, so their use in the Proposed Action to convey water supplies would not be a change from current conditions. The Proposed Action would not result in any increase in the water level of Lake Isabella, because each entity that has storage in the reservoir cannot exceed their allowed AF amount. Any water not taken from Lake Isabella as a result of a district receiving water under the Proposed Action would have to be released if it would cause the allowed amount to be exceeded. Therefore, the least Bell's vireo and southwestern willow flycatcher would not be affected by any flooding of nests or habitat.

This EA also addresses the conveyance of the exchangees' CVP water under Article 55 of the SWP contracts when combined with Article 5(a) exchanges of the CVP contracts. The conveyance of CVP water under Article 55 could result in the exchangee(s) receiving a higher rank on the SWP hierarchy. Conveying water under Article 55 would not result in additional water conveyed. DWR would pump this amount of water although the label on the water and

recipients may differ. The proposed exchanges, conveyance and approvals are subject to applicable laws including the “no injury” rule. Therefore, Article 55 of the SWP contracts would not affect federally listed species or critical habitats (i.e. there would be no effects beyond those addressed by the current biological opinions and biological assessment for the continued long-term operation of the CVP and SWP).

Due to the criteria for the Proposed Action, districts would not be able to expand their service areas, bring native or fallowed lands (fallowed for three years or more) into cultivation, or alter current environmental conditions without further environmental review and approval. Most of the species addressed in this EA are not adapted to highly disturbed conditions and are poor colonizers; mostly for that reason, they have declined to the point of becoming threatened or endangered. Typically, they would not become established on land that had been fallowed for two years or less and would not occur on land that is being cultivated or is highly disturbed. Furthermore, the Proposed Action is a short-term action, which further limits the chance that it would result in land use changes.

The few species that could occupy these lands are: the Buena Vista Lake shrew, San Joaquin kit fox, Tipton kangaroo rat, blunt-nosed leopard lizard, Kern mallow, San Joaquin woolly-threads, Western Burrowing Owl and Swainson’s Hawk. As a result of the commitments made by all of the contractors involved in the proposed action, which include those from the LTRC Opinion, and in conjunction with the limitations of a short-term action, these species would not be affected. The amounts of water received by the CV contractors are only those covered under their contracts for CVP water. These commitments would also protect native lands, including those within two miles of the contractors’ service areas. These native lands include critical habitat for the Buena Vista Lake shrew, California Condor, CTS, fleshy owl’s-clover, Hoover’s spurge, SJV Orcutt grass, vernal pool fairy shrimp, and the vernal pool tadpole shrimp.

### **Cumulative Effects**

As the Proposed Action is not expected to result in any direct or indirect effects on special-status species (including Federally listed or proposed species) or any critical habitat, it would not contribute cumulatively to any effects on those resources.

## **3.4 Cultural Resources**

### **3.4.1 Affected Environment**

Cultural resources is a term used to describe both ‘archaeological sites’ depicting evidence of past human use of the landscape and the ‘built environment’ which is represented in structures such as dams, roadways, and buildings. The National Historic Preservation Act (NHPA) of 1966 is the primary Federal legislation which outlines the Federal Government’s responsibility to cultural resources. Other applicable cultural resources laws and regulations that could apply include, but are not limited to, the Native American Graves Protection and Repatriation Act, and

the Archaeological Resources Protection Act. Section 106 of the NHPA requires the Federal Government to take into consideration the effects of an undertaking listed on cultural resources on or eligible for inclusion in the National Register of Historic Places (National Register). Those resources that are on or eligible for inclusion in the National Register are referred to as historic properties.

The Section 106 process is outlined in the Federal regulations at 36 CFR Part 800. These regulations describe the process that the Federal agency (Reclamation) takes to identify cultural resources and the level of effect that the proposed undertaking will have on historic properties. In summary, Reclamation must first determine if the action is the type of action that has the potential to affect historic properties. If the action is the type of action to affect historic properties, Reclamation must identify the area of potential effects (APE), determine if historic properties are present within that APE, determine the effect that the undertaking will have on historic properties, and consult with the State Historic Preservation Office (SHPO), to seek concurrence on Reclamation's findings. In addition, Reclamation is required through the Section 106 process to consult with Indian Tribes concerning the identification of sites of religious or cultural significance, and consult with individuals or groups who are entitled to be consulting parties or have requested to be consulting parties.

The CVP is being evaluated for the National Register. Facilities include the Friant Dam and the FKC. Friant Dam is located on the San Joaquin River, 25 miles northeast of Fresno, CA. Completed in 1942, the dam is a concrete gravity structure, 319 feet high, with a crest length of 3,488 feet. The FKC carries water over 151.8 miles in a southerly direction from Millerton Lake to the Kern River, four miles west of Bakersfield. The water is used for supplemental and new irrigation supplies in Fresno, Tulare, and Kern Counties. Construction of the FKC began in 1945 and was complete in 1951.

### **3.4.2 Environmental Consequences**

#### **No Action Alternative**

The No Action Alternative would result in water not being delivered to CV contractors. There would be no affect to cultural resources as a result.

#### **Proposed Action**

The Proposed Action is administrative in nature and would allow for the delivery of water through existing conveyance to CV contractors who have previously received water. As a result, there would be no potential to affect historic properties pursuant to 36 CFR Part 800.3(a)(1). There would be no affect to cultural resources as a result.

### **3.4.3 Cumulative Effects**

Because the Proposed Action is not ground disturbing, land use change and would not require new facilities or infrastructure to be built and therefore it would not contribute to cumulative impacts to archaeological or historical resources.

## **3.5 Indian Trust Assets**

### **3.5.1 Affected Environment**

Indian trust assets (ITAs) are legal interests in assets that are held in trust by the U.S. Government for federally recognized Indian tribes or individual Indians. The trust relationship usually stems from a treaty, executive order, or act of Congress. The Secretary of the Interior is the trustee for the United States on behalf of federally recognized Indian tribes. “Assets” are anything owned that holds monetary value. “LEgal interests” means there is a property interest for which there is a legal remedy, such a compensation or injunction, if there is improper interference. Assets can be real property, physical assets, or intangible property rights, such as a lease, or right to use something. ITAs cannot be sold, leased or otherwise alienated without United States’ approval. ITAs may include lands, minerals, and natural resources, as well as hunting, fishing, and water rights. Indian reservations, rancherias, and public domain allotments are examples of lands that are often considered trust assets. In some cases, ITAs may be located off trust land.

Reclamation shares the Indian trust responsibility with all other agencies of the Executive Branch to protect and maintain ITAs reserved by Indian tribes, or individual Indians by treaty, statute, or Executive Order.

The Tule River Indian Tribe is located along the Tule River upstream from Success Dam. It is possible Indian Trust Assets exist. Clarifications of Indian and other water rights along the Tule River are currently under review.

### **3.5.2 Environmental Consequences**

#### **No Action Alternative**

The No Action Alternative is similar to the Proposed Action. Historical diversions and water deliveries would continue as in the past. Therefore no impacts to ITAs would occur.

#### **Proposed Action**

The Proposed Action involves water that is already allocated and would not interfere with water deliveries, ceremonial activities, or conclusion of water rights reviews for Indian Tribes. Therefore, the Proposed Action would have no impacts to ITAs.

## **Cumulative Effects**

The Proposed Action would not interfere with ongoing water rights settlements for Indian Tribes. The Proposed Action would not result in additional water supplies for the exchangers or exchangees. No additional water supplies would be diverted from reservoirs or rivers. Therefore, the Proposed Action would not contribute to cumulative effects on ITAs.

## **3.6 Socioeconomic Resources**

### **3.6.1 Affected Environment**

The human population in the southern SJV increased substantially in the 1980's, led by 50 to 60 percent growth in the Fresno, Bakersfield and Visalia-Tulare urban areas (DWR 1998). This trend is expected to continue and the region's population is projected to more than double over the next 30 years. Most of the future growth within the southern SJV is expected in Fresno, the Visalia-Tulare area and Bakersfield (DWR 1998). Between 1996 and 1998, the counties of Fresno, Kern, Tulare and Kings were in the top seven urbanizing counties within California and the top eight with the most irrigated farmland converted to urban land during the same period (CDC 2000).

The socioeconomical conditions in the SJV are described in more detail in the incorporated by reference documents. In summary, the agricultural industry significantly contributes to the economic vitality of the SJV. One in three jobs is related to the agricultural industry.

Agriculture is the leading industry within the Tulare Lake Basin, as reflected by the majority of the private land being used for irrigated agriculture. Three million acres of irrigated agriculture occurs between the southern limit of the San Joaquin River watershed and the crest of the Tehachapi Mountains, versus 176,300 acres of urban areas (DWR 1998).

### **3.6.2 Environmental Consequences**

#### **No Action Alternative**

Under the No Action Alternative, Reclamation may not have a streamlined environmental review process resulting in redundancy and inefficiency and increased administrative costs. Exchange requests may not be approved in a timely manner and implemented when water is available. Water prices may increase slightly for the local area.

#### **Proposed Action**

The Proposed Action involves similar amounts of water delivered and applied to lands in the SJV as in the past. The Proposed Action would allow for improved water deliveries to the CV Contractors when it is needed during the growing season and maintain the stability of the agricultural market and economical vitality for the SJV.

It is likely the exchangers and exchangees would seek the least costly exchanges by conveying water shorter distances resulting in less power usage. The amount of power needed to convey 128,300 AF/y of water is small when compared to the overall water supplies and power used each year to move water where it is needed. CVP power is currently not used for exchanges occurring under Article 55 of the SWP. The CV contractor would enter into mutually agreeable exchange arrangements that include terms, conditions, and responsible party(s) for the payment of power.

The Proposed Action and imbalanced exchanges would not result in significant impacts to crop production, associated job opportunities or socio-economics.

The Proposed Action would result in improved water management and could reduce purchases of water supplies by the CV contractors. The Proposed Action could maintain costs for water through the imbalanced exchange scenario. The amount of water is small and would not contribute to significant changes in water prices.

### **Cumulative Effects**

The Proposed Action when added to other actions does not contribute to significant increases or decreases in socio-economical conditions. The multiple water service actions have occurred historically and are not precedent setting. The Proposed Action would not increase or decrease long-term water supplies that would result in decisions by landowners to permanently change existing land uses.

Water districts strive to provide affordable surface water to the farmers to curtail groundwater overdraft and to maintain the economic stability and agricultural related jobs and economic base within their communities and service areas. In addition, water service actions are sought to convey water over shortest distances to lower pumping costs and energy usage. The saved money is used to hire staff, pay overhead costs, maintain and improve facilities. These water districts are non-profit and maintain financial records that are accessible to the public.

Providing affordable surface water to farmers could curtail urban sprawl. The population in California is expected to grow over the next couple decades. Land values are anticipated to increase as housing becomes scarce. These trends are expected to continue and could entice farmers to sell their lands. These conditions are likely to occur with or without the proposed exchanges.

DWR and Reclamation have existing agreements for paying power costs associated with CVP water conveyed in SWP facilities. Reclamation provides CVP power to convey this water to the CV contractors. DWR and Reclamation may swap power to facilitate the exchanges. Currently,

the CV contractors are responsible for paying for the power used to convey water under Article 55.

The exchangee(s) could sell this water back to DWR or Reclamation to meet refuge water supplies or for the Environmental Water Account. Article 5(a) states these imbalanced exchanges are not transfers. Therefore, Reclamation does not charge the full cost rate and the non-CVP contractor would get this water at the same cost of the CV contractors.

## **3.7 Environmental Justice**

### **3.7.1 Affected Environment**

Executive Order 12898, dated February 11, 1994, requires Federal agencies to ensure that their actions do not disproportionately impact minority and disadvantaged populations. Many agricultural jobs require unskilled labor and the pay tends to be low. The employment opportunities for agricultural jobs draw low income and minority populations. The farm workers reside in surrounding communities.

### **3.7.2 Environmental Consequences**

#### **No Action Alternative**

The No Action Alternative may result in less water delivered for irrigated agriculture within the CV contractor's service areas. Less water could translate into less acres planted and less jobs for farmworkers who are typically from minority and disadvantaged populations. The No Action Alternative would have a small negative impact on minority and disadvantaged populations.

#### **Proposed Action**

The proposed exchanges would result in the preservation of jobs for minority or disadvantaged populations within the exchangee's or exchanger's service areas. The same amount of water is available for crop lands within the SJV. Managing existing water supplies would continue as in the past including decisions to purchase other supplies, pumping groundwater, planting or growing less water intensive types of crops or fallowing lands. No lands would be permanently taken out of agricultural production. No increase of cultivated lands would occur as a result of the Proposed Action. Overall there would be a small positive impact to minority and disadvantaged populations.

#### **Cumulative Effects**

The Proposed Action does not contribute to cumulative effects to low or disadvantaged populations. The Proposed Action, when added to other water service actions improve water management to grow crops that sustain job agricultural job opportunities providing a benefit for minority or disadvantaged populations. No lands would be taken out of long-term agricultural



production. No increase of cultivated lands would occur as a result of conveying and deliveries of this water.

## **Section 4 Consultation and Coordination**

### **4.1 Fish and Wildlife Coordination Act (16 USC . 651 et seq.)**

The Fish and Wildlife Coordination Act requires that Reclamation consult with fish and wildlife agencies (federal and state) on all water development projects that could affect biological resources. The proposed action will not impound, divert or modify any body of water, and so the Fish and Wildlife Coordination Act does not apply.

### **4.2 Endangered Species Act (16 USC . 1521 et seq.)**

Section 7 of the Endangered Species Act requires Federal agencies, in consultation with the Secretary of the Interior, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of these species.

The Proposed Action would support existing uses and conditions. No native lands would be converted or cultivated with CVP water. The water would be delivered to existing homes, through existing facilities, as has been done in the past, and would not be used for land conversion. Therefore, the Proposed Action would have no effect on federally listed threatened or endangered species or any critical habitat. Reclamation will send a copy of the final EA and FONSI to FWS for their records, and to comply with the requirements of the CVPIA PBO.

### **4.3 National Historic Preservation Act (15 USC 470 et seq.)**

Section 106 of the NHPA requires federal agencies to evaluate the effects of federal undertakings on historical, archeological and cultural resources. No features or resources have been identified that could be impacted by the Proposed Action.

### **4.4 Migratory Bird Treaty Act (16 USC Sec. 703 et seq.)**

The Migratory Bird Treaty Act implements various treaties and conventions between the U.S. and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the Act provides that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Subject to limitations in the Act, the Secretary of the Interior (Secretary) may adopt regulations determining the extent to which, if at all, hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of

any migratory bird, part, nest or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns.

The Proposed Action would have no effect on birds protected by the Migratory Bird Treaty Act.

#### **4.5 Executive Order 11988 – Floodplain Management and Executive Order 11990-Protection of Wetlands**

Executive Order 11988 requires federal agencies to prepare floodplain assessments for actions located within or affecting flood plains, and similarly, Executive Order 11990 places similar requirements for actions in wetlands. The Proposed Action would not affect either concern.

## Section 5 List of Preparers and Reviewers

Judi Tapia, Supervising Natural Resource Specialist, Reclamation  
Shauna McDonald, Wildlife Biologist, Reclamation  
Barbara Hidleburg, Repayment Specialist, Reclamation, reviewer

## Section 6 References

Kern County Water Agency. 2000. Annual Report

Reclamation. October 1999. Final Programmatic Environmental Impact Statement for the Implementation of the Central Valley Project Improvement Act

Reclamation. June 2004. Biological Assessment for the Long Term Central Valley Project and State Water Project Operations Criteria and Plan, dated June 30, 2004

(USFWS, July 30, 2004) Biological Opinion for the Coordinated Central Valley Project and State Water Project Operations Criteria and Plan (OCAP)

(NMFS, October 2004) Biological Opinion for the Operations Criteria and Plan

(Reclamation, April 1, 1997) Blanket Approval of Temporary Transfers and Exchanges of Project Water Between Friant Division Contractors During the Interim Period

(Reclamation, January 19, 2001) A Finding of No Significant Impact and final EA, Cross Valley Unit Long Term Contract Renewal

(Reclamation, January 19, 2001) A final EA, Friant Division Long Term Contract Renewal

(USFWS, October 15, 1991, May 14, 1992 and January 19, 2001) Biological Opinion on U.S. Bureau of Reclamation Long Term Contract Renewal of Friant Division and Cross Valley Unit Contractors.

(Reclamation, March 2000) A Finding of No Significant Impact and final EA, Blanket Approval of Historic Temporary Transfers and Exchanges of Central Valley Project Water Between Friant Water Service Contractors

(Reclamation, ) Supplemental EA for the Long Term Contract Renewal for the Cross Valley Contractor. A final EA and FONSI are expected to be signed on or about February 18, 2006.

(Reclamation, March 2004) A Finding of No Significant Impact and final EA, Exchange of Cross Valley Central Valley Project Water between Lower Tule River Irrigation District and Tulare Lake Basin Water Storage District

(Reclamation, November 2003) A Finding of No Significant Impact and Final Ten Year EA for the Annual Exchange of 20,000 Acre Feet of Water Between Fresno Irrigation District, Kern Tulare Water District and Tulare Lake Basin Water Storage District

(Reclamation, July 2004) A Finding of No Significant Impact and final EA, Approval For Exchange and or Transfer from Kern-Tulare and Rag Gulch Water District to Kern County Water Agency

(US Army Corps of Engineers) Kaweah River Basin Investigation and Draft Environmental Impact Statement

(Reclamation, January 2004) EA and Finding of No Significant Impacts for the Kern Tulare Water District and Rag Gulch Water District Groundwater Banking Project Rosedale-Rio Bravo Water Storage District

(Shafter-Wasco Irrigation District, October 1993) Initial Study of Environmental Aspects of the Shafter-Wasco/Semitropic Interconnection and Water Banking Program

(Rosedale-Rio Bravo Water Storage District, July 2001) Final Master Environmental Impact Report Groundwater Storage, Banking, Exchange, Extraction & Conjunctive Use Program